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Guest Editors

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Cover: Douglas Jordan in the field.

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Dr. Douglas F. Jordan
University of Connecticut



Dr. Frederic W. Warner
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This special issue of the *ASC Bulletin* is dedicated to Dr. Douglas F. Jordan and Dr. Frederic W. Warner in recognition of and respect for their lifetime contributions to our knowledge of Connecticut's archaeological heritage. Both have recently retired from extensive careers of teaching and academic responsibility at their respective schools.

Connecticut's archaeological community has not known a more interesting and contrasting pair of individuals. One is widely known as reserved, meticulous, and obsessive about factual details, the other helter skelter and definitely not reserved. Nonetheless, these scholars enjoyed an enduring friendship and passion about Connecticut archaeology.

Doug and Fred generously shared their knowledge and wisdom with their students, the archaeological community, and the interested public. Both provided guidance and extensive service to the Archaeological Society of Connecticut throughout their careers. Countless archaeologists, town officials, property owners, and Connecticut citizens have benefitted from their expertise and concern about the state's archaeological resources.

Kenneth L. Feder
David A. Poirier

DOCTOR, LAWYER, INDIAN CHIEF: THE MANY ROLES OF THE STATE ARCHAEOLOGIST

**NICHOLAS F. BELLANTONI
OFFICE OF STATE ARCHAEOLOGY**

INTRODUCTION

The 1994 meeting of the National Association of State Archaeologists (NASA) recognized the need for educational materials describing the role of state archaeologists and their relationship to professional and avocational archaeologists, historic preservation partners, Native Americans, and the general public. While state archaeologists coordinate with these diverse communities, there appears to be a lack of understanding as to what it is we do and what the benefits are of working with state archaeologists. For example, NASA members pointed out that

- * State Archaeologists maintain comprehensive site files and maps.
- * State Archaeologists are most aware of policies and laws affecting archaeological study and conservation of sites.
- * State Archaeologists have access to in-state networks of practitioners and a supportive public.
- * Office of State Archaeologists (OSA) are often clearinghouses of information about current archaeological activity.
- * State Archaeologists may have positions within state museums.
- * State Archaeologists may serve as sources of information regarding funding opportunities.
- * NASA can represent the states on nationwide and regional matters.
- * Office of State Archaeologists may include knowledgeable staff who can serve as resources across state lines (NASA 1994).

State archaeologists also serve the archaeological community with information on computer applications, Geographic Information Systems, adult public education, secondary education, repatriation and reburial issues, shipwrecks, inundated sites, disaster response, site protection on private property, curation issues, coordination with amateur archaeologists and Native Americans, site records, and site management.

HISTORY OF THE OFFICE OF STATE ARCHAEOLOGISTS

The ability to provide these services was not always available from state archaeologists. These positions originally developed with the historic preservation movement of the early twentieth century. State archaeologists often held "honorary" positions with state universities and museums and had little or no operating budgets from which to work and vague legislative responsibilities as archaeological "salvagers", "surveyors," "curators," and "researchers." For example, in 1964 Dr. Douglas F. Jordan, appointed the first Connecticut state archaeologist, served "without compensation" as an anthropologist employed by the University of Connecticut with full-time teaching and curatorial duties; he was also charged with conducting research on Indians and archaeology and with cooperating with others to preserve archaeological remains threatened with loss (McGimsey 1972:134-135). At the time, the New England states of Massachusetts, Rhode Island, New Hampshire, Vermont and Maine had no formal state archaeologist or office to handle preservation-related concerns.

This situation changed dramatically after Congress enacted the National Historic Preservation Act of 1966. Although passage of this legislation was motivated by concerns for urban redevelopment, it covered a broad range of historic properties including archaeological sites. Section 101 of the National

Historic Preservation Act of 1966 established in each state and territory a State Historic Preservation Office (SHPO), which functions as a liaison agency between federal and state governments with respect to preservation programs, and instructed the Secretary of the Interior to maintain a National Register of Historic Places. Section 106 requires every federal agency having direct or indirect jurisdiction over any proposed federally funded, assisted, or licensed undertaking to take into account the effect of that undertaking on any property on or eligible for the National Register. Field surveys are often required to identify archaeological or historic sites that may be adversely effected by federal projects. Professional review with federal agencies regarding archaeological resources encouraged state historic preservation offices to hire staff archaeologists to ensure compliance of cultural resource management projects. As a result, archaeologists became involved with establishing broad policies of historic preservation including the active encouragement of state and local legislation.

Prior to the passage of the National Historic Preservation Act of 1966 and subsequent amendments, few states had effective programs for archaeological preservation (McGimsey 1972). However, by 1995, all states and territories had some form of statewide archaeological protection legislation; 37 had enacted shipwreck/salvage legislation, and 45 mandated the protection of Native American and other burials (Carnett 1995). This increase in federal, state and local preservation legislation provided opportunities for the professional management of archaeological resources as well as more specific mandates for state archaeologists and SHPO archaeologists.

In 1987 the Connecticut Office of State Archaeology changed from the "honorary" duties of an unfunded faculty member to the specific powers and duties:

- 1) To supervise the care and study of the archaeological collections of the State Museum of Natural History; 2) to coordinate the (a) archaeological salvage of properties threatened with destruction, (b) public and private archaeological research and the encouragement of the highest possible standards in archaeological investigations and (c) preservation of Native American and other human osteological remains and cemeteries with the Connecticut Historical Commission, the Office of the State Medical Examiner, the Indian Affairs Council and other state agencies; (3) to conduct research on the state's prehistory and history and disseminate the results of such research through publications and other means; (4) to educate the public about the significance and fragility of archaeological resources; (5) to respond to inquiries about the state's archaeological resources; and (6) to maintain comprehensive site files and maps (Connecticut General Statutes Section 10a-112).

All these mandated duties to supervise, coordinate, conduct, educate, and maintain, required the commitment of a funded office of state archaeology with staff.

Today few state archaeologists are still affiliated with universities and museums which usually require research, teaching, and survey. The majority of state archaeologists now serve in state historic preservation offices with responsibilities for review and compliance of federal and state sponsored development projects. In states having established state archaeologists overseeing salvage operations, difficult "territorial" situations sometimes developed when state historic preservation office archaeologists began to carry out cultural resource review of federal projects. As each state developed preservation mechanisms, the roles and responsibilities of the state archaeologist's office and the state historic preservation office were unclearly defined and occasionally "jurisdictional" problems resulted.

OSA IN CONNECTICUT

In Connecticut, we worked to avoid the "stepping on toes" by formulating a division of labor that would provide a more encompassing preservation mechanism. The Connecticut State Historic Preservation Office's archaeologist reviews all federal and state funded projects for impacts to archaeological resources. In addition, he acts as enforcement officer to ensure compliance with federal and state legislation. The Connecticut Office of State Archaeology (OSA) provides technical assistance to local municipal officials

to review development projects that are privately funded and do not require compliance with federal or state preservation legislation. Connecticut did away with the county government system in the 1960s and in doing so gave each municipality land use decision-making capabilities. As a result, 169 separate local governments regulate, through their planning and zoning and/or conservation commissions, the review of proposed development projects within their respective boundaries addressing concerns of the local community. To assist town governments, the state established enabling statutes to guide municipalities as to what they can regulate in their review process. In this regard, municipal zoning commissions were given the ability to develop zoning regulations for the "protection of historic factors" (Connecticut General Statutes Section 8-2; Kearns and Kirkorian 1987).

"Historic factors" has a broad interpretation and can include archaeological sites. Hence, the Office of State Archaeology provides technical assistance to town officials, landowners, developers and others for evaluating private development projects for the protection of archaeological resources. Our office advises local officials about regulations that are needed to protect historic and prehistoric archaeological sites within their communities. The Office of State Archaeology also provides emergency technical assistance for construction projects that "fall through the cracks" of the federal and state regulatory system.

The formalization of archaeological protection laws at all government levels has resulted in mandated responsibilities for state archaeologists to oversee the administration and compliance of these laws. As a result, opportunities for personal research have become limited to them. The roles of the state archaeologist have become increasingly bureaucratic and administrative and are geared primarily to ensure that professional standards of archaeological investigation are adhered to within cultural resource management projects and that archaeological preservation laws and regulations are complied with. Although roles and responsibilities differ based on the preservation mechanism in place, all offices of state and/or SHPO archaeologists can provide a number of important services to the archaeological and other diverse communities within each state or territory.

ROLES OF THE STATE ARCHAEOLOGIST

1. Administration of State Archaeology Offices

The offices of state and SHPO archaeologists serve as clearinghouses for archaeological information in each of the states. Far more than providing general information to an interested public, state offices provide technical information to archaeologists and other preservation professionals. State offices maintain comprehensive site files and maps and, while this information is treated as confidential and for management purposes only, qualified researchers and archaeological consultants are usually permitted access to these files. Connecticut statutes (Connecticut General Statutes Section 10-321d) provide exemption from Freedom of Information requests for archaeological site location data should our offices decide that such information would threaten the site's integrity. Obviously, these precautions are necessary in order to prevent access to site information by individuals who would vandalize and/or destroy these fragile cultural resources. Site files include inventories of data for the identification and description of archaeological sites, as well as factors of environment, site integrity and threats, research potential, significance, and any additional informational data needed to evaluate the eligibility of the site for the National Register of Historic Places. Site maps are recorded on U.S.G.S. quadrangle maps by UTM coordinates and recently, on computerized Geographic Information Systems. Site data can be readily correlated with topographic and environmental features, including soil types, slope, proximity to water sources, exposed bedrock, and vegetational patterns.

State archaeology offices also provide access to cultural resource management reports. A vast body of technical reports has emerged since the implementation of the National Historic Preservation Act of 1966 and justifiable criticism concerning a lack of peer review and access from the academic community has often been raised (e.g., Dincauze 1994). To address these issues, most states have coordinated with library facilities to provide increased access to researchers and archaeological consultants. For example,

the Connecticut State Historic Preservation Office has set up an arrangement with the Archives and Special Collections Library in the Thomas J. Dodd Research Center at the University of Connecticut (Storrs Campus). All cultural resource management reports generated as the result of Connecticut State Historic Preservation Office and/or Office of State Archaeology review are on file and publicly accessible. In addition, the Office of State Archaeology and the State Historic Preservation Office have established the *Connecticut Archaeology Library*. Over 5,000 archaeological books, newsletters, journals, bulletins, federal and state cultural resource management reports, audio-visual materials, and unpublished manuscripts are available to students, avocational archaeologists, researchers and the general public.

State archaeology offices recognize the importance of disseminating information within their states. The ability to provide this service depends on the resources available to each office. Staff and funding to produce newsletters and other informational material can be limited. In Connecticut, we have tried to deal with these limitations by providing an information sheet entitled, *DIGGING IN: News from the Office of State Archaeology and the Connecticut Historical Commission*. A two-page news brief, *DIGGING IN* focuses on a single topic per issue; this news brief has provided important guidance to the state's archaeological community on how to enact municipal regulations, described state legislative citations in archaeology (Figure 1), announced national preservation awards, and reported on statewide cultural resource management projects.

In addition, an electronic forum for archaeologists has been developed by Thomas Plunkett and Jonathan Lizee from the Department of Anthropology at the University of Connecticut. These researchers developed ArchNet (Plunkett and Lizee 1995), a data archive system which is accessible through Internet using Gopher and/or World Wide Web tools. This system contains images, reports, maps, data, and hypertext materials (<http://spirit.lib.uconn.edu/ArchNet/ArchNet.html>). ArchNet has given the Connecticut Office of State Archaeology the ability to provide information to tens of thousands of institutions and users, not only in Connecticut but worldwide. As more and more archaeologists have access to the "Information Highway," these computer systems will allow archaeologists instant access to data from state and federal archaeology offices directly to the researcher's desk.

2. Curation of Anthropological Collections

State archaeologists associated with museums and universities often have curatorial responsibilities for their states. The Connecticut State Museum of Natural History, which administers the Office of State Archaeology, has been designated as the state repository for all artifacts found on state lands (Connecticut General Statutes Section 10-383). As such, the Office of State Archaeology attempts to reposit all artifacts, fieldnotes, and photographs from state regulated cultural resource management projects. This central repository permits access not only to contract reports, but to the artifacts and fieldnotes themselves. For instance, extensive information is available for comparative analysis from the Federal Railroad Administration's data recovery efforts along the City of New London's historic waterfront (Artemel *et al* 1984), and the Iroquois Gas Transmission System's cultural resource management program provides an important regional database consisting of over 150 archaeological sites through western Connecticut. State museum repositories have established collections policies on acquisitions, conservation, loan and transfer of artifacts. State archaeological collections provide artifacts for research and public exhibits, which strive to create awareness of the need for archaeological preservation and conservation.

The Anthropological Collections at the University of Connecticut include, among others, the Norris L. Bull collection of Native American artifacts. This extensive collection, primarily assembled from 1930 to 1960, includes over 10,000 artifacts of Indian origin, representing all regions of the state and temporal periods (Figures 2, 3). Access to the collection by researchers is available through the Office of State Archaeology. As the finite number of archaeological sites continues to dwindle, museum collections will become an increasingly important source of research into the cultural past.



Digging In

News From the Office of State Archaeology & the Connecticut Historical Commission

Laying Down the Law

A Guide to Legislative Citations in Archaeology

This list was compiled as a reference to help you make decisions concerning cultural resource management in Connecticut. Each item includes a Connecticut General Statute citation and a brief description of the law or agency involved.

State Archaeologist

Connecticut General Statutes (C.G.S.) Section 10a-112: Establishes Office of State Archaeology at the University of Connecticut's Museum of Natural History to identify, protect and preserve the state's archaeological heritage, in coordination with the Connecticut Historical Commission.

Connecticut Historical Commission

C.G.S. Sec. 10-321 *et seq.*: Establishes Connecticut Historical Commission to identify and protect state's cultural heritage; establishes Connecticut Historical Commission as the State Historic Preservation Office for Connecticut; authorizes State Register and National Register of Historic Places; authorizes Commission to withhold disclosure of specific site location data in order to preserve archaeological site integrity.

Archaeological Artifacts

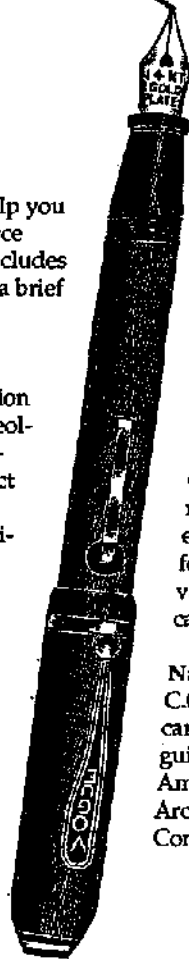
C.G.S. Sec. 10-383: Designates the Connecticut State Museum of Natural History as state repository for all artifacts found on state lands. Directs museum to establish collections policy on acquisitions, preservation, loan and transfer of artifacts.

State Archaeological Preserves

C.G.S. Sec. 10-384: With coordination of Office of State Archaeology, authorizes Connecticut Historical Commission to designate eligible sites as state archaeological preserves following notification, as applicable, to private owner, state agency, and Native American Heritage Advisory Council.

Native American Heritage Advisory Council

C.G.S. Sec. 10-382: Establishes Native American Heritage Advisory Council to provide guidance and recommendations on Native American heritage to the Office of State Archaeology and the Connecticut Historical Commission.



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Figure 1. "Laying Down the Law: A Guide to Legislative Citations in Archaeology," from *Digging In*, an informational sheet produced by the Connecticut Office of State Archaeology and the Connecticut Historical Commission.

Archaeological Investigations on State Lands
C.G.S. Sec. 10-386: Authorizes permit process for archaeological investigation on state lands or state archaeological preserves; applications are reviewed by Connecticut Historical Commission in coordination with Office of State Archaeology and Native American Heritage Advisory Council.

Archaeological Preservation

C.G.S. Sec. 10-387: Directs state agencies to review their policies and practices for consistency with the preservation of archaeological sites.

Native American Burials

C.G.S. Sec. 10-388 *et seq.*: Provides for *in situ* preservation or archaeological excavation and reburial of human remains encountered during construction, agricultural, archaeological or other ground disturbance. Defines roles and responsibilities of the Medical Examiner, State Archaeologist, Connecticut Historical Commission and Native American Heritage Advisory Council.

Ancient Burial Ground and Gravestone Preservation

C.G.S. Sec. 19a-315b: Protects ancient burial grounds and gravestones. Requires notification to the Connecticut Historical Commission for any gravestone removal or cemetery renovation; Commission makes recommendation to Connecticut Probate Court on such requests.

Connecticut Environmental Protection Act

C.G.S. Sec. 22a-15 through 22a-19: Creates legal recourse to examine unreasonable destruction of historic resources listed, or under consideration for listing, on the National Register of Historic Places.

Connecticut Environmental Policy Act

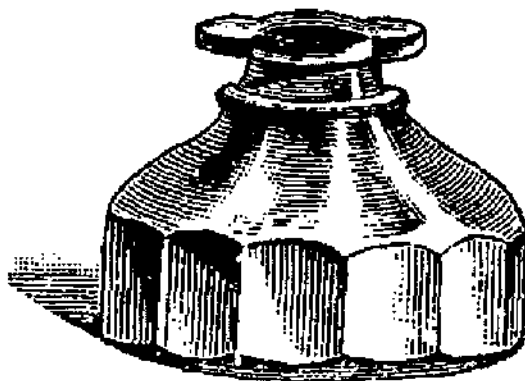
C.G.S. Sec. 22a-1 *et seq.*: Directs state agencies to consider historic, architectural and archaeological resources are properly considered in the planning and development of state projects.

Local Historic Districts and Historic Properties

C.G.S. Sec. 7-147: Enabling statute which provides for establishing local historic districts and historic properties (including archaeological sites) governed by local ordinances and a local historic district commission.

Municipal Historians

C.G.S. Sec 7-148(c)(5)(D): authorizes appointment of municipal historians.



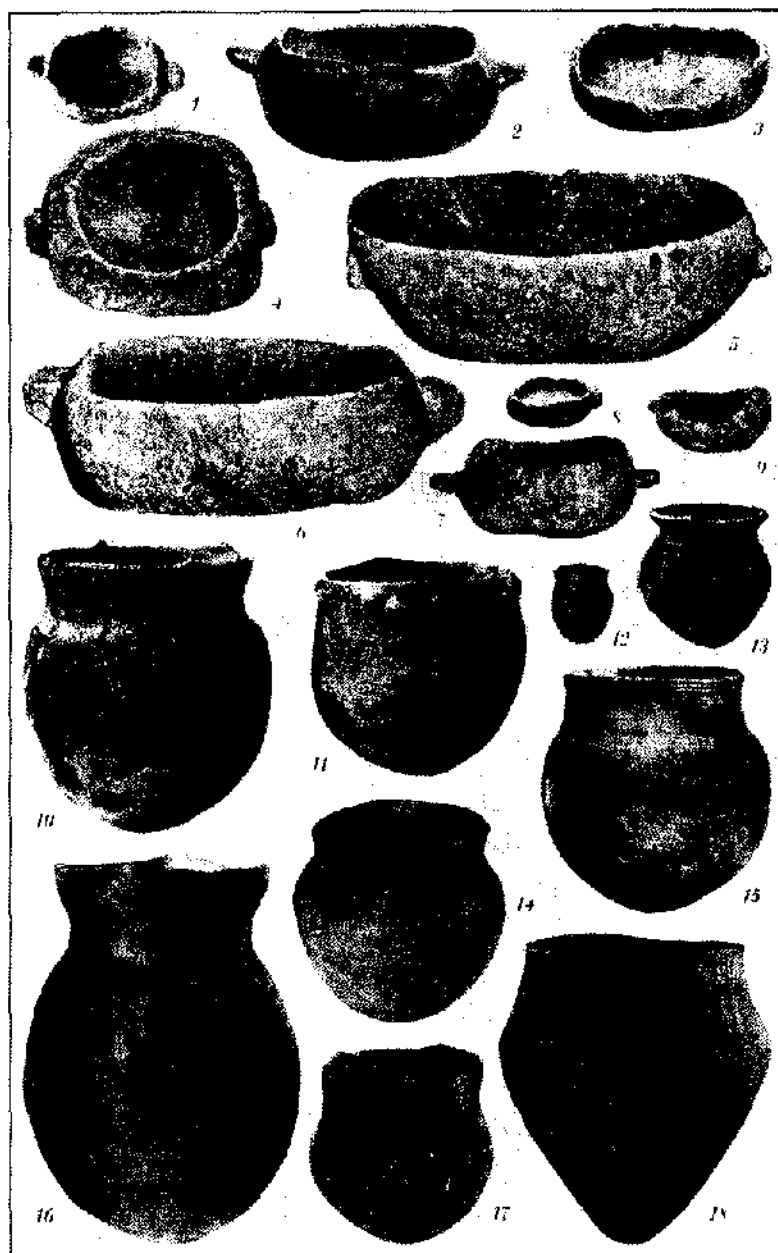


Figure 2. Native American stone and clay containers from the Norris L. Bull Collection, University of Connecticut Anthropological Collections, Office of State Archaeology.

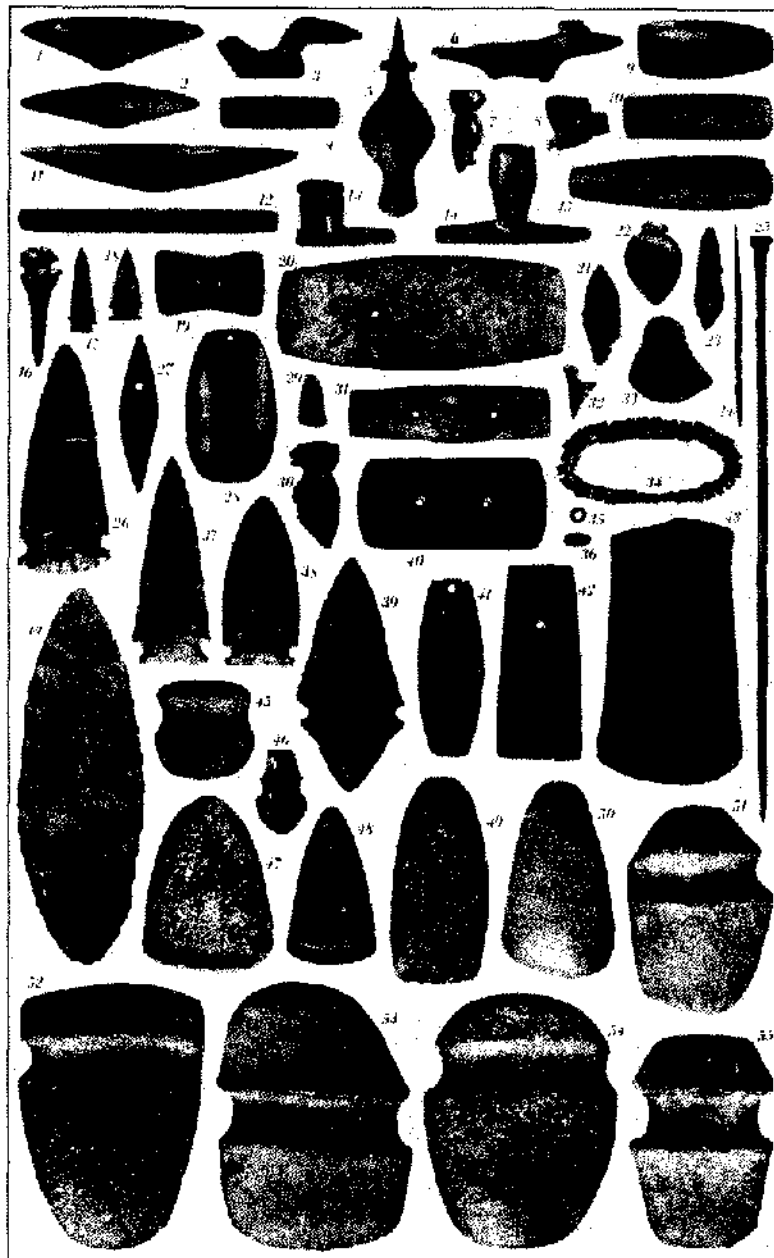


Figure 3. Native American stone and metal artifacts from the Norris L. Bull Collection, University of Connecticut Anthropological Collections, Office of State Archaeology.

3. Coordination of the Salvage of Archaeological Properties

In the State of Connecticut, we are currently losing an estimated 100 archaeological sites a year primarily due to new construction, vandalism, and natural erosion. As mentioned above, federal, state, and local legislation provide procedures to review archaeological resources for development projects that come under their respective jurisdictions. Unfortunately, these may include only federal and state funded projects. Of the 169 Connecticut municipalities making land use decisions for privately funded projects, currently only 20 towns have effective planning and zoning regulations for the review of archaeological resources (Table 1). Hence, the great majority of towns reviewing proposed construction projects are not adequately addressing the issue of archaeological site protection.

TABLE 1. CONNECTICUT MUNICIPALITIES WITH LOCAL PRESERVATION MECHANISMS FOR THE PROTECTION OF ARCHAEOLOGICAL SITES.

Planning and Zoning Regulations

Bethany	Ledyard
Bloomfield	Litchfield
Deep River	Marlborough
East Granby	North Branford
Farmington	Pomfret
Goshen	Rocky Hill
Greenwich	Sterling
Haddam	Stratford
Kent (Housatonic River District)	Westport
Killingworth	Willington

Municipalities Considering Proposed Regulations

Mansfield
New Hartford

Municipalities Which Utilize Archaeological Sensitivity Maps

Clinton
New Fairfield
Old Lyme
Westbrook

When the Office of State Archaeology testifies to the need for such protection due to proposed local construction projects, we often do so on precarious legislative ground. With little regulatory support, cogent arguments are made for preservation. The success of these arguments is often determined by the commitment of town officials and commission members to effectively balance preservation and new construction. "Grass-roots" advocacy from the local community plays an extremely important role in convincing town officials to support cultural resource protection. State officials can testify to town officials for the need; however, it takes local citizen campaigning for archaeological preservation to make it happen.

When archaeological surveys cannot be mandated, the Office of State Archaeology mobilizes amateur and professional archaeologists as a last resort to mitigate impacts prior to construction activities. The office maintains lists of volunteers and members of archaeological societies willing to assist in the preservation of sites in their communities. Rescue fieldwork is coordinated by networking throughout the region of the project area. With no operating budget for staff, the Office of State Archaeology relies on local volunteers, qualified archaeologists, students, and historians to assist in rescue operations. Without this network of concerned individuals who generously devote their time and expertise, we would be unable to save many sites prior to construction activities.

4. Preservation of Unmarked Burials

Connecticut General Statutes Sec. 10-388 *et seq.* provides for the *in situ* preservation or archaeological excavation and reburial of unmarked human burials encountered during construction, agricultural, archaeological, or other ground disturbance activities. This statute defines the respective roles and responsibilities of the Chief State Medical Examiner, State Archaeologist, Connecticut Historical Commission, and the Native American Heritage Advisory Council. This legislation requires the reporting of any human remains encountered during land use operations to local police departments. Disturbance activities must cease until the Chief State Medical Examiner has the opportunity to determine if the remains are associated with a modern criminal investigation or, are "historical" and fifty years old or more. If the human remains represent the latter, then the state archaeologist is notified to conduct further investigation. The primary goal of the Office of State Archaeology is to maintain the burials in place. However, should this approach not be feasible, the state archaeologist is given by law a limited amount of time to archaeologically remove all of the burials from the site. All possible means of preserving burials in place are explored with excavation the last effort to prevent destruction.

The decision to excavate human remains comes only after consultation with a number of concerned parties. For example, should the remains be of Native American cultural origin, the Native American Heritage Advisory Council is notified immediately. The council makes recommendations to the state archaeologist and State Historic Preservation Office for the treatment of human remains and organizes reburial according to Northeastern Native American spiritual beliefs. When identification of the human remains indicate other ethnic groups, the state archaeologist proceeds to locate possible descendants or community groups to represent the dead. In addition, local municipal governments, public health officials, and other pertinent agencies are notified and their concerns addressed.

Rarely do archaeologists encounter a disinterested public in these unfortunate and sensitive situations. Diplomacy, sincerity, and sensitivity are required to understand the various viewpoints and respond to their diverse personal and professional concerns (Bellantoni and Poirier 1995). All human remains accidentally uncovered since passage of this legislation in 1989 have been, or are in the process of being, reburied according to the cultural prescription of the ethnic group concerned.

5. Archaeology and Public Education

Of all the roles discussed above, probably the most important responsibility of the state archaeologist is to create public awareness and support for archaeological preservation because ultimately it is the public that decides whether the science of archaeology will continue to exist. Successful lobbying for preservation legislation, support of tax dollars for archaeological protection, and the ability of any archaeologist to conduct excavations on private property, all depend on our success in developing a sympathetic public constituency that understands the contributions of our science and the importance of protecting fragile archaeological sites. Without this public support system, there is no science of American archaeology.

The state archaeologist is in a unique position as public spokesperson for archaeology, working closely with the media answering questions concerning archaeological activities, addressing interested public groups on preservation needs, and educating school children about the importance of archaeological science. Our office conducts an average of three newspaper interviews a week, provides over 70 public

presentations a year, and at least once a week, coordinates school activities throughout Connecticut to create public support for archaeology today and into the future.

In addition, the Office of State Archaeology and the State Historic Preservation Office coordinate annually to promote Connecticut Archaeology Awareness Week. The Office of State Archaeology has also developed important partnerships with the Iroquois Gas Transmission System, the Mashantucket Pequot Nation, the Connecticut Trust for Historic Preservation, and the Algonquin Gas Transmission Company, among others, regarding the sponsorship of Connecticut's Archaeology Awareness Week. This week provides an important opportunity for educating school children and the public about the diverse cultural groups that have shaped the state's history and the importance of preserving Connecticut's archaeological sites. In a short time, these "awareness weeks" have become outlets for the archaeological, Native American, and historical communities to organize activities celebrating the significance of the past and its relevance to contemporary culture. The series of lectures, workshops, museum exhibits, site tours, and other events have provided new opportunities for the general public to learn and become involved with archaeology. The design of Connecticut's Archaeology Awareness Week posters has given the state national recognition; in particular, the 1993 poster (Figure 4) received an Honorable Mention commendation from the Association of American Museums.



Figure 4. Connecticut's 1993 Archaeology Awareness Week Poster.

SUMMARY

Dr. Douglas F. Jordan became the first Connecticut state archaeologist in the early 1960s. With the establishment of this new position, Jordan set up the initial site inventory files using a standard trinomial numbering system and maps. He served the Archaeological Society of Connecticut in various offices,

including president, and worked to unify amateur and professional archaeologists. He developed the first archaeological salvage program using volunteers from the Archaeological Society of Connecticut and University of Connecticut students. He curated the University of Connecticut Anthropological Collections, including the cataloguing of the Norris L. Bull Collection. He organized the University of Connecticut's summer archaeological field school and, throughout this time, he was actively conducting research on Connecticut prehistory. Doug Jordan helped to train an entire generation of archaeology students in the classroom and the field, many of whom have contributed to this volume including the author.

In establishing the inaugural position, Doug Jordan had to overcome a lack of funding and staff and no specific mandates from the state to review cultural resources. In 1987, the Office of State Archaeology was reorganized to provide more legislative responsibilities for the state archaeologist. This new action improved legal standing for the preservation of archaeological sites on private property not covered by federal laws. However, no additional staff has been allocated to the Office of State Archaeology to implement these new legislative responsibilities. As a result, the current Office of State Archaeology has a greater potential for preservation actions, but continues to lack the staff and operational funding to fully implement this work.

While the specific roles of each state archaeologist are defined by the respective laws of individual states, the responsibilities are multi-faceted and somewhat similar throughout the nation. It is a position that will continue to diversify as the threat to archaeological resources increases and as archaeological sites decrease.

REFERENCES CITED

- Artemel, Janice G., Andrea Heintzelman-Muego and Margaret Orelup
 1984 *Bank Street Waterfront: New London, Connecticut*. Northeast Corridor Improvement Project. U.S. Department of Transportation, Washington, D.C.
- Bellantoni, Nicholas F. and David A. Poirier
 1995 Family, Friends, and Cemeteries. *CRM* 18(3):29-31.
- Carnett, Carol
 1995 *A Survey of State Statutes Protecting Archaeological Resources*. Archaeological Assistance Study. National Park Service, Washington, D.C.
- Dincauze, Dena
 1994 Forward. *Cultural Resource Management: Archaeological Research, Preservation Planning, and Public Education in the Northeastern United States*, edited by Jordan E. Kerber, pp. xvii-xxi. Bergin and Garvey, Westport.
- Kearns, Betsy and Cece Kirkorian
 1987 *Archaeological Resource Protection Handbook*. Connecticut Historical Commission, Hartford.
- McGimsey, Charles R., III
 1972 *Public Archaeology*. Seminar Press, New York.
- NASA
 1994 *National Association of State Archaeologists Newsletter* 14(2):3.
- Plunkett, Thomas K. and Jonathan M. Lizee
 1995 ArchNet and Archaeological Cyberspace. *CRM* 18(3):5-7.

THE MASHANTUCKET PEQUOT INDIAN RESERVATION ARCHAEOLOGICAL DISTRICT: A NATIONAL HISTORIC LANDMARK

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INTRODUCTION

The Mashantucket Pequot Indian Reservation Archaeological District was designated by the Secretary of the Interior as a National Historic Landmark on April 12, 1992. This article is a revised version of the form used to nominate the Mashantucket Pequot Reservation Archaeological District for this federal recognition (McBride and Grumet 1992). Unless otherwise indicated, archival documentation and site report information presented in both the National Historic Landmark nomination and this article are drawn from McBride (1990, n.d.).

The Mashantucket District was one of 17 properties designated as National Historic Landmarks through the National Park Service's Historic Contact Theme Study (Grumet 1995). Fourteen of these were, like Mashantucket, newly designated properties. Three others were existing National Historic Landmarks originally nominated for significant associations with other themes in American history. Utilizing data and review comments provided by State Historic Preservation Offices and nearly 200 members of professional, avocational, and tribal communities in the region, the theme study contrasted the Mashantucket District with near 1,000 other known contemporary sites in the Northeast. The study showed that the Mashantucket locale has "yielded or may be likely to yield information of major scientific importance." In so doing, Mashantucket was found to fulfill "Significance Criterion 6" of the National Historic Landmark program regulations as cited in 36 CFR 65.4(a)[6].

The Mashantucket District comprises 1,637.79 acres of archaeologically sensitive land in the northeastern corner of the town of Ledyard in New London County, Connecticut. District acreage largely consists of heavily glaciated rocky uplands ranging from 150 to 300 feet AMSL (Above Mean Sea Level) in an area historically known as Mashantucket. Mashantucket is located in the northern portion of a larger area of uplands historically called Wawarramoreke by Pequot Indian people. Soils in this area generally are rocky, thin, and poorly drained. All parts of the District except a large freshwater wetland today known as Cedar Swamp and historically known to Pequot people as Ohomowauke, "Owl's Nest," or Cuppacommock, "Refuge or Hiding Place," in the northeastern portion of the community, are covered by a thick mixed oak-hemlock forest. Mashantucket lands are drained on the south by tributaries of Whitford Brook flowing into the Mystic River and on the north by the upper reaches of Indiantown Brook and other streams flowing eastward into Poquetanuck Cove on the Thames River.

The modern Mashantucket community is located within territory chronicled as Pequot land in the earliest known surviving map of the region, Adriacn Block's 1614 projection. Early sources indicate that the heavily forested Mashantucket area was used as a hunting and foraging area by Pequot people living in large, occasionally fortified, long-term settlements located farther downriver near Long Island Sound along the lower Mystic and Thames Rivers. Pequot use of this area briefly diminished in the years following their defeat and dispersion by New England colonists in the Pequot War in 1637. The area again became an important hunting and foraging place for Pequot people following the establishment of the first Pequot reservations during the latter half of the seventeenth century. A 500 acre coastal settlement known as Noank was established for Pequots under the leadership of Robin Cassasinamon in the town of Groton near Mystic, Connecticut in 1651. The Connecticut General Assembly set aside another 500 acres on Long

Pond in North Stonington just east of Mashantucket as a reservation for Eastern or Paucatuck Pequot people led by the sachem Wequash in 1683.

Connecticut authorities gave Pequots living at Noank permission to use land at Mashantucket in 1658. In 1666, they set aside some 3,000 acres of land at Mashantucket west of Long Pond as a reservation for the Pequot people. Although Pequot people continued to plant and fish at Noank, Mashantucket soon became the major focal point of their lives. Agreeing to exchange their Noank tract for a survey and clear title to Mashantucket in 1721, they permitted surveyors commissioned by Connecticut provincial authorities to lay out two contiguous parcels for their community at Mashantucket. A tract containing 989 acres was set aside around the Cedar Swamp in the eastern side of the reservation. Immediately adjacent to the west side of the reservation, surveyors marked out 654 acres for the Indians on Walnut Hill.

Non-Indian people increasingly encroached on reservation lands as Mashantucket population dwindled during the eighteenth century. Compelled to sell unoccupied land in and around Walnut Hill, the tribe finally ceded the entire section to Connecticut in 1793. In 1856, the Connecticut legislature formally reduced the remaining 989 acres of tribal land to 214 acres under the terms of "An act relating to the Ledyard Pequot Indians, and the preservation of their property" after disease, emigration, and deaths caused by seafaring and war service in colonial armies drastically reduced Pequot numbers (Public Acts 1855-60). Although they never gave up their reservation, only a few Mashantucket Pequot people were able to live on the much diminished tract. The rest were living elsewhere by the early twentieth century.

In 1976, the Mashantucket Pequot Tribe sued for the return of alienated reservation lands. On October 18, 1983, the United States Congress passed the "Connecticut Land Claims Settlement Act." The Act conferred federal recognition to the Mashantucket Pequot Indian Tribe and authorized the community to acquire up to 2,270 acres to be held in trust for the Mashantucket Pequot people by the Secretary of the Interior as a federal Indian Reservation (Public Law 98-134, 95 Stat. 852, 25 U.S.C. 1751-1760). This land was to be acquired from a specially designated area known as "Settlement Land" located within the original 1666 reservation.

The Mashantucket Archaeological District National Historic Landmark encompasses 1,245.20 acres of federal trust lands located within the 2,270 acre settlement land parcel and another 392.59 acres of land held by the tribe in fee simple outside of the Settlement Land area, but within the original 1666 reservation boundary.

ARCHAEOLOGICAL RESOURCES

Ongoing archaeological investigations begun in 1983 by the Public Archaeology Survey Team, Inc. (PAST) of the University of Connecticut thus far have identified 73 archaeological sites within the Mashantucket District. Fifteen properties have been specifically identified as sites dating to the early Historic Contact period. Each of these properties has been surveyed, mapped, and subjected to systematic surface examination or subsurface test excavations. Archaeological materials discovered at these sites have been mapped, documented, and either retained *in situ* or removed for curation. All curated materials presently are stored in research facilities located on the reservation and at the University of Connecticut (Storrs).

Of the 58 resources determined to date to earlier or later periods, 31 represent remains of prehistoric temporary campsites used at various times between 9,000 and 500 years ago. Fourteen properties are associated with post-Historic Contact period Pequot occupations (13 date to the nineteenth century; the other dates to the early 1900s). Five properties are associated with non-Indian occupations. The final eight resources are of uncertain chronological identity.

The Sixteenth and Seventeenth Centuries

Twelve of the 15 Historic Contact period properties located within the Mashantucket District are general habitation sites. Components consisting of mixed deposits of aboriginal and European materials

dating to the sixteenth or seventeenth centuries have been identified at four locales, Sites 72-31, 72-34a, 72-54, and 72-62. Each is a multi-component site also containing eighteenth-century deposits. The earliest of these, Site 72-31, contains aboriginal lithics and floral and faunal remains associated with Windsor phase Niantic-Stamped vessels believed to date to the 1500s or early 1600s. These vessels exhibit paste types and decorative motifs usually occurring in terminal Late Woodland period Hackney Pond wares found in sites identified as Pequot occupations. Aboriginal lithics and quartz crystals also have been found with a wide range of European ceramics, glass beads, and other materials dating to the late seventeenth century at Sites 72-34a, 72-54, and 72-62.

Sites 72-31, 72-34a, and 72-54 represent single small, seasonal camps or homesteads occupied by people whose permanent homes were located at Noank or larger communities elsewhere on the reservation. Site 72-31 probably was a temporary campsite used by people who lived in large, concentrated, and often fortified coastal settlements of the type chronicled by early seventeenth-century colonial observers. The occupants of Sites 72-34a and 72-54, and the larger and later seventeenth-century Site 72-62, by contrast, probably spent most of their time along the coast at Noank or in larger communities on the reservation. These communities are mentioned at Mashantucket in early sources, but have not yet been identified archaeologically.

Archaeological and documentary data from nearby locales indicate that Pequot people probably erected small round and oblong bark- or grass-mat covered sapling-framed wigwams at these locales. Although all served to some extent as hunting and foraging camps, archaeological materials encountered at Site 72-62 corroborate written sources suggesting that some portion of the later seventeenth-century Pequot community also planted small gardens and orchards within low fieldstone walled enclosures near settlements in and around the reservation.

The Eighteenth Century

Eleven of the 12 Historic Contact period sites are small to moderately-sized camps or farmsteads dating to the eighteenth century. Deposits found in these sites reflect the dramatic changes that occurred in Indian life in the area as Mashantucket became the focal point of the Mashantucket Pequot community following the sale of the coastal Noank Reservation in 1721.

These sites corroborate documentary records reporting Pequot adoption of European tools, crops, planting techniques, and other innovations. They also show that community members accepted these changes in different ways and at different times. In 1732, for example, an observer noted that many Mashantucket people still practiced traditional forms of shifting cultivation. Another chronicler writing in 1762 recorded that 15 of 24 Pequot households in Mashantucket continued to live in bark or mat-covered wigwams.

This same source noted that people belonging to seven other households lived in wooden framed houses generally measuring 16 by 22 feet. Whatever form of housing they used, most Mashantucket Pequot people resided on three to four acre farmsteads. Most were surrounded by low fieldstone walls enclosing houses, outbuildings, wells, root cellars, planting fields, or orchards. Several wood roads capable of supporting wheeled vehicles were cut through reservation lands at this time. Evidence of these changing patterns of life is preserved in the small to moderately sized permanent single-household isolated habitation sites briefly described below.

Site 72-31 is a rockshelter enclosing stratified deposits containing diagnostic lithics and ceramics dating from Late Archaic to Late Woodland times. More than 600 rim fragments and body sherds representing at least six Niantic-Stamped vessels have been found with stone tools in intact deposits dating to Terminal Late Woodland times. Lithic debitage, carbonized maize, charcoal, substantial amounts of calcined bone and floral material, and small amounts of wood, shell, and metal scraps also have been found in intact hearths, pit features, and site fill dating from the sixteenth to the eighteenth centuries.

Site 72-34a is the most extensively tested site in the District. Eighty-eight excavation units dug to varying depths have uncovered more than 160 square feet of site surface area. These excavations have revealed extensive intact deposits associated with late seventeenth- and early eighteenth-century Pequot

occupation. Aboriginal lithics and quartz crystal have been found with delft and redwares, European white clay pipes, textiles, glass beads, buttons, bottle glass, European flint, brass scraps, lead shot, nails, pewter buttons, shell, calcined deer, raccoon, squirrel, and other bones, carbonized maize, other botanical remains, and large amounts of fire-cracked rock. An oblong-shaped pattern of post molds surrounding a hearth probably represents the remains of a wigwam. Concentrations of calcined bone found in piles of fire-cracked rock believed to represent remains of a roasting platform occur just beyond this post mold line.

Site 72-39 contains subsurface deposits and discontinuous fieldstone walls and rock piles extending over an area of from one to three acres. Although clearly identifiable house foundations have not yet been identified at this locale, quantities of quahog shell and broken and crushed calcined bone, concentrations of bottle glass, white clay tobacco pipes, and a variety of redwares, creamwares, pearlwares, stonewares, earthenwares, and porcelain dating to the last decades of the eighteenth century found with window glass, nails, bricks, and other building debris in southern portions of the site area probably represent deposits associated with a frame dwelling or wigwam. Two features, a hearth and a small shell midden, also have been found in this area.

Site 72-41, also known as the Williams Brook Site, contains fieldstone walls, stone piles, and deposits associated with an isolated four to five acre late eighteenth-century farmstead. Concavities believed to represent seven root cellars and at least three semi-subterranean structures dug into south-facing slopes also have been found. Structural debris, bottle glass, calcined bone, and a large assemblage of late eighteenth-century European ceramics (including overglazed hand painted creamwares, hand painted pearlwares, English Jackfield, redware, delftware, and North American salt glazed stonewares) have been excavated in and around these features.

Site 72-54 is a small short-term camp or homestead. Aboriginal lithics have been found with a copper button and small amounts of locally-produced brown/green glazed redware within five of the 11 test units thus far excavated over a distance of more than 600 linear feet at this locale.

Site 72-62 consists of a three-sided dry-laid stone enclosure containing dense concentrations of aboriginal chert, quartzite, and argillite lithics, small amounts of shell and calcined bone, tin-glazed earthenwares, metal scraps, white clay tobacco pipes, and bricks. A shallow, charcoal-laden lens believed to be the remains of a hearth is also within this enclosure.

Site 72-67 is a small farmstead marked by intersecting fieldstone walls. A small assemblage of late eighteenth-century white clay tobacco pipes, creamware, and redware has been found along both sides of the central stone wall bisecting the site.

Site 72-70a consists of at least 16 small stone piles located within a fieldstone-walled enclosure encompassing a three to four acre area. Small concentrations of late eighteenth-century undecorated creamwares, pearlwares, English Jackfield, stonewares, and redwares have been found in test excavations placed in northern portions of the site.

Site 72-70b consists of a stone wall complex and the remains of a D-shaped field stone house foundation excavated into the south-facing valley slope situated approximately 600 feet east of Site 72-70a. Survey archaeologists believe that the D-shaped fieldstone configuration found at this site may have supported a sapling-framed wigwam. Aboriginal abrading stones and stone flake tools have been found with late eighteenth-century creamwares, pearlwares, stonewares, redwares, bottle and window glass, white clay tobacco pipes, iron kettle fragments and nails, an iron knife blade, and numerous sawed unburned cow bone fragments in test units excavated in and around the foundation.

Site 72-80 is a moderately-sized farmstead. A continuous stone wall surrounds two fields at this locale. A concavity measuring 20 by 30 feet thought to represent a house cellar is located at the wall's northwestern corner. Creamwares, pearlwares, redwares, and white clay tobacco pipes dating to the late eighteenth or early nineteenth centuries have been found with window and glass fragments, iron fragments, and calcined bone in and around this concavity. A fieldstone well and a concentration of fieldstones believed to represent the foundations of an outbuilding are located near the property's southwestern corner. Another fieldstone concentration believed to represent the foundation of a second outbuilding occurs 130 feet north of the main farmstead enclosure.

Site 72-83 contains the remains of a moderately-sized farmstead. More than 100 piles of rocks have been identified within the fieldstone wall enclosing this locale. Stone piles at this and similar sites probably reflect results of agricultural field clearing efforts. Excavation has unearthed what is believed to be a portion of the corners of a buried single-course stone house foundation. Small numbers of aboriginal stone flake tools, white clay tobacco pipe fragments, calcined bone, shell, bottle glass, and early eighteenth-century delftwares and redwares have been recovered from intact deposits within and around this foundation area.

Large Nucleated Eighteenth-Century Townsite

Only one large nucleated townsite, Site 72-42, has been discovered within the District (Figure 1). Identified as the remains of the historically chronicled center of the eighteenth-century Mashantucket Pequot community known as Indiantown, Site 72-42 deposits stretch across a 25 acre area extending on both sides of Kate Swamp Road for half-a-mile along the western shore of Cedar Swamp. Lost and undisturbed since its abandonment during the early years of the nineteenth century, recent archaeological surveys have located and mapped stone walls and foundations associated with as many as 30 dwellings. Historically chronicled church or school buildings associated with the Site 72-78 cemetery located 1,500 feet to the north of Indiantown have not yet been found.

Surface indications at Indiantown [Site 72-42] largely consist of stone piles, concavities, and linear fieldstone wall patterns. All are located within a 25 acre area one-half mile in length. PAST, Inc. currently believes that these features probably represent remains of barns, root cellars, animal pens, wells, and the foundations of from 20 to 30 houses. Nearly all of these features are joined together by a complex pattern of interlocking stone fences. A still-extant wagon road runs through the center of the community. Complex stone wall-lined concavities mark the locations of many house and barn foundations. Smaller, less elaborate concavities are thought to represent half cellars.

Temporally diagnostic white clay tobacco pipes and European ceramics such as English delftwares, salt-glazed stonewares, pearlwares, creamwares, redwares, and American Jackfield have been found with building debris and calcined deer, sheep, and pig bones during controlled surface collections and in 30 excavation units placed within stone concentrations and other features at the site.

Spiritually Significant Eighteenth-Century Cemeteries

Three cemeteries, Sites 72-34c, 72-49, and 72-78, have been identified within District boundaries. Disturbed graves associated with Site 72-49 have been tested archaeologically. Respecting the wishes of the Mashantucket Pequot community, PAST, Inc. archaeologists have not tested undisturbed marked graves within present reservation bounds. Pequot community oral traditions and newspaper reports chronicling looting incidents directly document Pequot use of these cemeteries. Discoveries of stone cobble grave markers at these sites identical to others marking Indian graves found during salvage excavations at a mid-seventeenth-century Mashantucket Pequot cemetery at Long Pond within original reservation boundaries further indicate that all three served the needs of the Pequot Indian community at one time or another during Historic Contact period times.

Site 72-34c is located within the 214 acre reservation area reserved for Pequot use in 1856. This cemetery is a small 100 square foot plot containing at least ten uninscribed cobble headstone and foot-stone-marked interments arranged in three rows. Surface survey findings indicate that graves at this locale probably vary in size and extent of marking. Pequot oral traditions state that a sachem named Mamoho is buried in this cemetery.

Site 72-49 is the largest known Mashantucket Pequot cemetery. Pequot oral traditions and more recent written records indicate that this cemetery has been in continual use since the last decades of the 1600s. It is first mentioned in written records in 1721 as a marker delineating northwestern bounds of Mashantucket Pequot Reservation lands marked out by surveyors.

A stone wall encloses a two acre cemetery containing at least 250 stone markers. Another 500 circular depressions believed to mark locations of Pequot graves disturbed by local relic collectors during

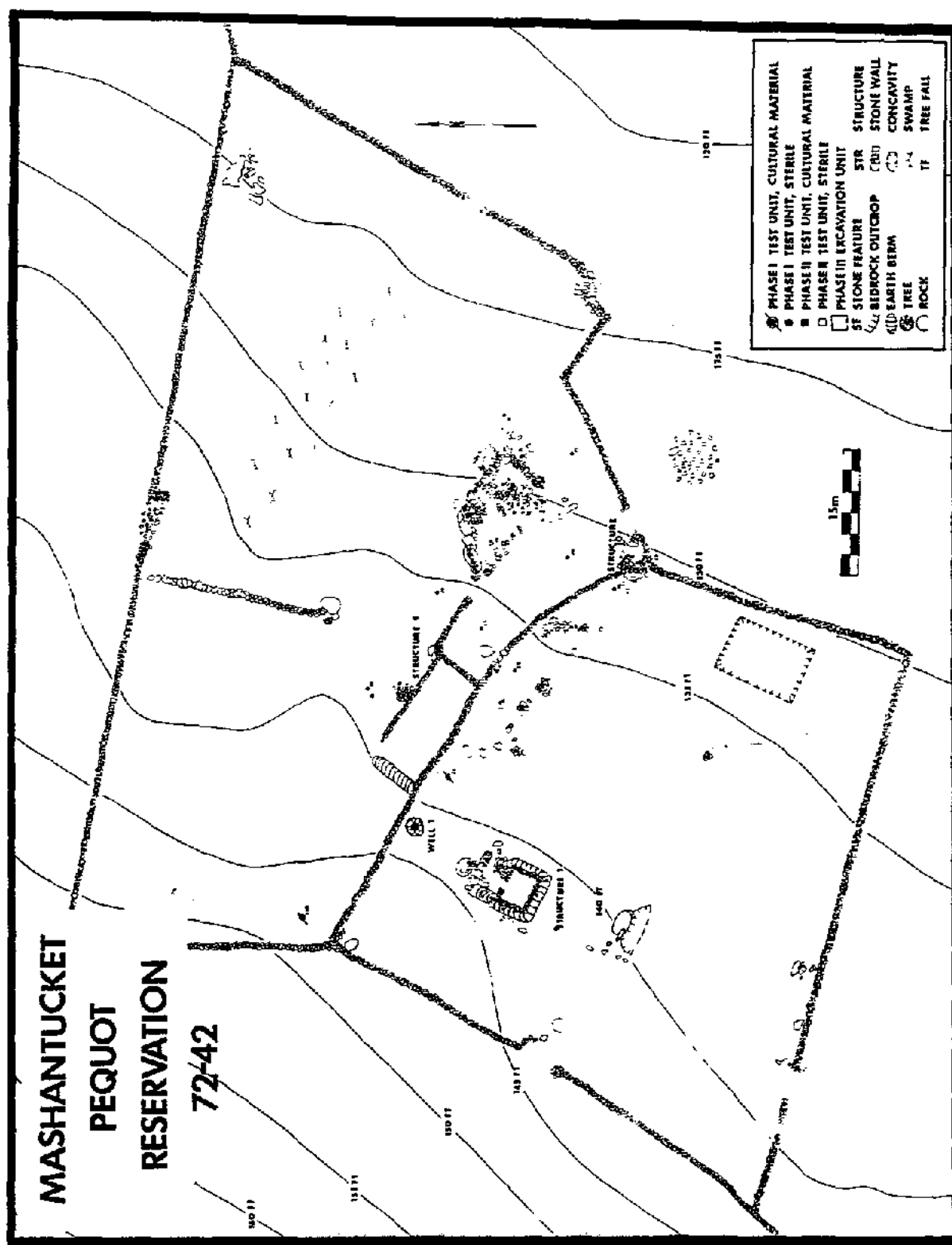


Figure 1. Plan view of Indiantown (Site 72-42), a large 18th-century Pequot town site located along Cedar Swamp on the Mashantucket Reservation.

the late nineteenth and early twentieth centuries are just beyond this wall. Contemporary accounts reporting unauthorized exhumations of Pequot burials at this locale describe discoveries of individuals found in sitting positions. Many of these burials also were reportedly accompanied by grave goods. Archaeologists examining soil profiles exposed during test excavations of several small concavities in the area beyond the cemetery enclosure have found soil stains reminiscent of grave shaft outlines. Funerary offerings, human remains, and other deposits have not been encountered in test units thus far excavated at this locale.

Site 72-78 is located near the Kate Swamp Road running through Indiantown to the south and west of Cedar Swamp. Situated 1,500 feet north of Indiantown and located near several nineteenth-century Pequot farmsteads, this cemetery is believed to have been used by Pequot community people during the 1800s. Approximately 30 to 40 graves marked by uninscribed headstones and footstones have been mapped at this locale. Two interments are marked by single upright stones ringed by smaller stones. Similar configurations have been observed at Long Pond grave sites containing human remains of Indian people buried with glass beads, shell beads, and other temporally diagnostic materials dating to the middle years of the seventeenth century.

Site Integrity

The integrity of Historic Contact period sites within the Mashantucket National Historic Landmark generally is high. Much of the reservation was primarily used for logging during the late nineteenth and early twentieth centuries. Although the full impact of this activity upon archaeological resources currently is not known, PAST, Inc. archaeologists have detected little evidence of logging damage in test excavations thus far undertaken within District boundaries.

Archaeological investigations corroborate documented incidents of looting at the Site 72-49 cemetery. These disturbances represent the only clearly identifiable evidence of deliberate damage to properties within the Mashantucket District.

Systematic controlled surface collections and test excavations conducted at habitation sites dating to the Historic Contact period within the Mashantucket District indicate that each possesses high integrity. Many of these resources are located in relatively remote or inaccessible areas. Others, such as Indiantown, have lain unvisited and unknown in all-but-forgotten obscurity for more than 150 years. All have escaped the attentions of developers and pot hunters.

IDENTIFICATION ISSUES

Aboriginally produced artifacts clearly mark Mashantucket District sites predating 1700. Written records, moreover, show that few non-Indian people lived at Mashantucket during the first century of direct contact. Both archaeological and documentary sources reveal that Mashantucket Pequot people were abandoning traditional technologies just as non-Indian settlers began moving onto their lands. Not surprisingly, Indian and non-Indian sites dating to the eighteenth century in the District possess many similarities. Both Indians and non-Indians extensively used locally abundant fieldstones to line wells and construct walls and house foundations. Both also used similar types of imported or locally-produced tools, utensils, ornaments, and weapons. Despite these similarities, archaeological deposits associated with Mashantucket Pequot Indian people may be distinguished from those of non-Indians in several ways.

Boundaries of reservation lands and non-Indian houses and farmsteads built within them are well-documented in contemporary sources. Most land purchased by settlers was acquired during the eighteenth century. As mentioned earlier, Walnut Hill lands were lost to the tribe between 1730 and 1760. No eighteenth-century Pequot settlement, and only a single cemetery, Site 72-49, are documented at this locale. Only one non-Indian settler, by contrast, is known to have moved onto Indian-owned lands during the 1700s.

Indian and non-Indian settlement patterns also differed. Non-Indians almost always located their settlements along major roadways during the eighteenth century. Pequot people, by contrast, tended to make their homes in more remote or inaccessible areas such as the Cedar Swamp.

Significant differences in site size and composition also distinguish eighteenth-century Pequot archaeological resources from those of contemporary non-Indians. Individual non-Indian farmsteads, such as Site 72-51 (Figure 2), an early nineteenth-century property, frequently contain more than 50 acres of land. Comparable Pequot farmsteads are never larger than four acres. Structural remains found at Indian-town and other known areas of Indian settlement indicate that Mashantucket Pequot homes were smaller and located closer to one another than those built by non-Indians. The settlement pattern of closely interlocking walls and structures found at Indiantown is not repeated in contemporary non-Indian communities. Discoveries of semi-subterranean D-shaped stone foundations and oblong post mold patterns corroborate written records reporting that Mashantucket Pequot people continued to live in traditional wigwams as late as the 1770s. No non-Indian is known to have lived in a wigwam at Mashantucket during these years.

Human burials in and around Mashantucket also reflect ethnic differences. Documentary sources reporting unauthorized excavations of Mashantucket Pequot graves corroborate Long Pond salvage excavation findings showing that Indian people continued to inter their dead in traditional flexed positions or in bone-bundle burials into the early 1700s. Non-Indians invariably buried their dead singly in extended positions. Extant sources further show that many Pequot people deposited grave goods in burials. Non-Indians, by contrast, rarely did the same in their own interments.

Both peoples also used distinct grave marking techniques. Non-Indians generally placed inscribed gravestones at the heads of graves. Findings of graves marked by a standing stone encircled by a ring of smaller cobbles at Long Pond suggest that similar configurations observed in Mashantucket District cemeteries mark graves of Pequot people.

As mentioned earlier, Pequot people generally used the same types of tools, utensils, and weapons employed by poorer colonists during the 1700s. Both utilized a wide array of locally produced and imported ceramic, metal, and glass objects and materials. Quartz crystals, flaked glass, and traditional aboriginal ground-stone tools such as mortars, grinders, and whetstones not found in non-Indian sites have been recovered from several eighteenth-century deposits in the Mashantucket District.

PRESENT APPEARANCE

The Mashantucket Pequot population had dwindled from 322 in 1725 to less than 50 people living in six houses when the reservation was reduced to 214 acres in 1856. This number continued to drop until only two Pequot people were living on reservation lands when tribe members began petitioning for return of their tribal territories in 1976. Since that time, more than 210 of a total registered tribal population of 380 have moved back to their now much enlarged reservation community.

Portions of the reservation located in and around the 214 acre community core have been subjected to extensive development since 1980. To date, 35 single family or two-unit buildings have been constructed. Other single family houses are under construction. The tribe has also constructed and maintains a paved road system, parking lots, a ballfield, water and sewerage facilities, a health center, a safety complex housing fire, police, and ambulance services, and a tribal office building. The tribe is also completing construction of the Mashantucket Pequot Museum and Research Center. Tribally-owned light industrial and commercial facilities constructed within reservation boundaries have included a pig farm, a maple sugar operation, hydroponic greenhouses, sand and gravel quarries, a restaurant, a bingo hall, and Foxwoods, the largest and most successful casino on the East coast.

Since 1980, the tribe has worked with federal, state, and local agencies to develop a comprehensive research and cultural resource management plan to study and protect cultural resources associated with their cultural heritage. Tribal regulations developed in accordance with this plan require that surveys be conducted prior to all construction actions undertaken within reservation boundaries. All archaeological

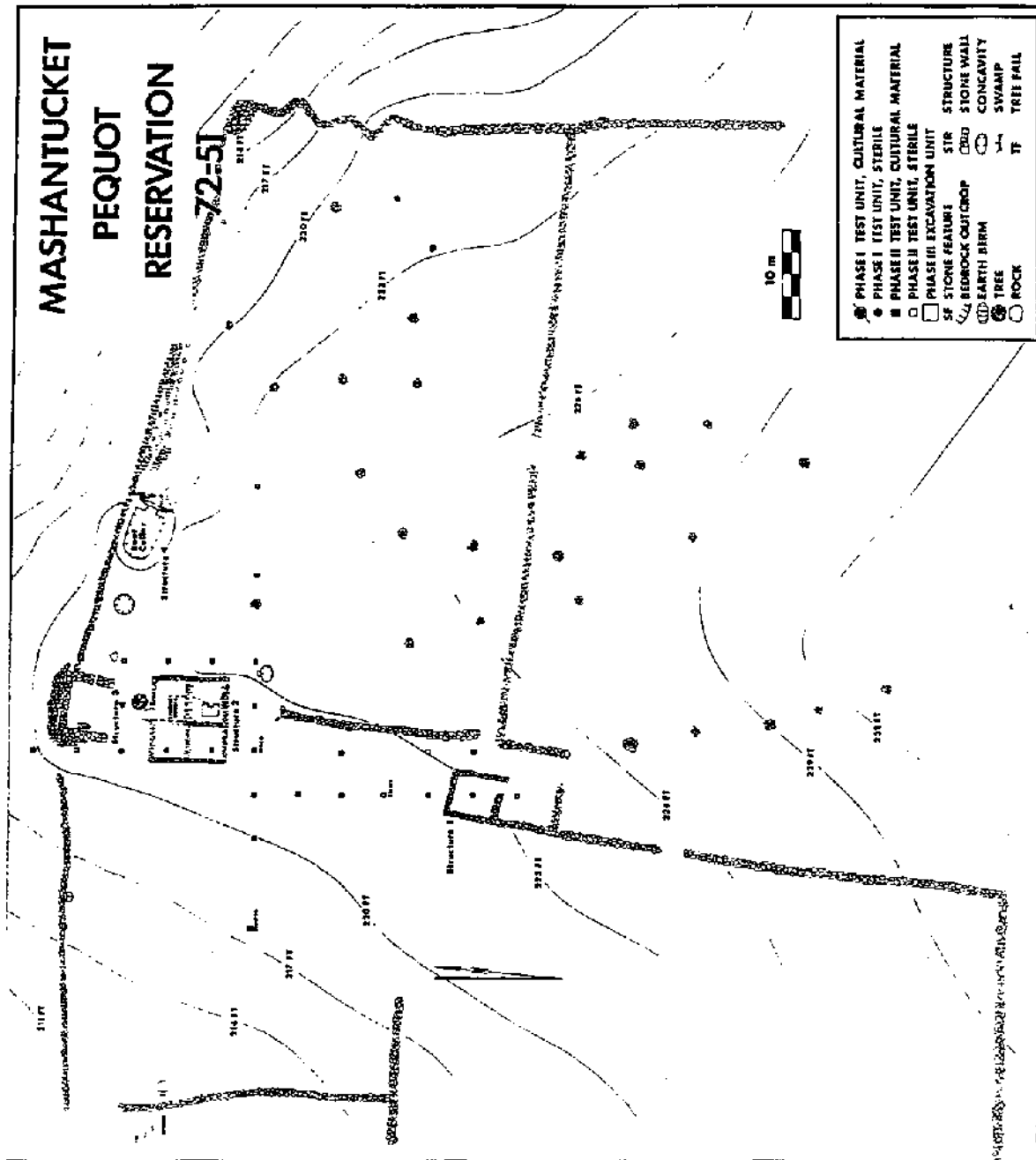


Figure 2. Plan view of Site 72-51, an early 19th-century non-Indian farmstead located on Mashantucket Pequot reservation lands.

studies are coordinated with the Connecticut Historical Commission to ensure conformance with professional standards. All cultural materials located during tribal undertakings are curated in facilities located on the reservation or at the archaeological laboratory of the University of Connecticut.

Tribal planners are furnished with locations of all inventoried sites in accordance with tribal regulations requiring consideration of project impacts on cultural resources. The Mashantucket Pequot community is committed to maintaining the integrity of its culturally significant properties. Cultural resource management programs administered by the tribe protect District archaeological resources from indiscriminate looting and mandate that future development projects consider all impacts on District cultural properties. Construction plans associated with several development projects have been significantly altered to avoid such impacts on potentially significant cultural resources within the Mashantucket District.

The Mashantucket Pequot tribal government vigorously implements its historic preservation policies within the District. The Mashantucket Pequot community also continues to support ongoing research. A sourcebook (Hauptman and Wherry 1990) contains scholarly papers presented at an October, 1987 symposium on Mashantucket culture and history sponsored by the tribe. Summarizing recent research in Pequot archaeology, ethnohistory, and ethnography undertaken during the federal acknowledgment process, this volume provides a benchmark for future studies of Pequot culture in particular, and New England Indian people in general. The federal government recognized these and other efforts of the Mashantucket community with a National Historic Preservation Award in 1988.

SIGNIFICANCE

The Mashantucket Pequot Indian Reservation Archaeological District was one of only six of the 16 properties designated as National Historic Landmarks through the Historic Contact Theme Study which specifically document Native adaptations to Northeastern environments during the earliest phases of contact. Four sites in the District contain Hackney Pond ceramics considered diagnostic of protohistoric or early historic Pequot Indian occupation. Similar pottery has been found in seven other sites located between the Connecticut River and the Rhode Island border. Six of these contain remains of small isolated campsites. The seventh, the Pequot Fort, is the site of the large fortified town destroyed by New England troops and their Narragansett and Mohegan Indian allies during the Pequot War on May 26, 1637. Listed in the National Register of Historic Places, this property includes numerous private landholdings within a still poorly defined area within a heavily developed residential district. Further archaeological research is needed in order to sufficiently document site boundaries and integrity to National Historic Landmark standards. Until that time, the Mashantucket District remains the only property containing deposits associated with early historic Pequot contact adaptations clearly meeting National Historic Landmark nomination requirements.

Mashantucket District deposits also have the potential to yield significant new information on presently poorly known aspects of Pequot lifeways at the time of initial contact. Ceramic-bearing site deposits located within the District, for example, have the potential to help archaeologists more fully understand identities of, and relationships between, makers and users of stylistically-related Guida Farm, Niantic, Hackney Pond, Shantok, and other southern New England Terminal Late Woodland period Windsor series wares. Such studies may facilitate development of techniques capable of producing finer and more accurate regional temporal controls, establishing ethnic identities and affiliations of site occupants, and identifying specific site type forms and functions.

All assemblages identified within Mashantucket District archaeological sites contain artifactual and faunal evidence of trade relationships. Exotic lithics and small amounts of aboriginal ceramics associated with Indian people living farther north and west, for example, testify to continuing, though diminished, Woodland era economic relations. Discovery of locally produced and imported non-Indian metalwares, glasswares, and ceramics, as well as the bones of chickens, sheep, pigs, cattle, and other imported

European domestic animals document changing patterns of trade relations between Pequot Indian people and foreign settlers.

Discovery of flexed burials, bundled bone interments, and burials containing funerary objects at the Long Pond Cemetery indicate that contemporary Pequot burial grounds located in the Mashantucket District have the potential to yield similar mortuary evidence documenting the persistence of traditional Pequot spiritual beliefs and practices. Changes in grave marking from unmarked to small shaft and cobble marked interments and a gradual shift from flexed or bundled burials accompanied by funerary objects to extended burials presently associated with surveyed graves marked by head and foot stones provide archaeological evidence of archivally documented exogenous influences upon traditional Pequot religious beliefs.

All Historic Contact period sites within the Mashantucket District contain temporally discrete assemblages of datable non-Indian ceramics, white clay tobacco pipes, and glass beads. These artifacts and associated imported wares, animal bones, and charred botanical remains have the potential to yield new insights into changing processes of technology transfer to Indian people in southern New England during the Historic Contact period.

Several bodies of archaeological evidence found within the Mashantucket District document Pequot demography and settlement patterns. The archaeologically documented shift from a pattern of small numbers of small short-term campsites to more substantial numbers of larger and longer-term individual farmsteads and the aggregated townsite of Indiantown reflects the historically documented demographic and settlement shift of the Mashantucket Pequot population from Nameag, Noank, and other coastal settlements to the reservation. Archaeological discovery of fieldstone foundations and walls reflects Pequot adaptation of European and American building techniques to Pequot needs. Patterns revealed by distinctive fieldstone features further indicate that several may have been used as foundations for traditional sapling-framed wigwams. Other patterns suggest foundations supporting European-style milled-wood frame houses.

The development of Indiantown also reflects shifting demographic and settlement patterns at Mashantucket. Established during the second half of the eighteenth century, Indiantown reflects adoption of new building techniques by a traditional Indian community. Like their predecessors, the builders of Indiantown located their village with an eye towards security. Located far from well-traveled highways or streams, Indiantown was built in a secluded and remote area near dense forests and a large swamp. Following long established patterns, Pequot people located their farmsteads close to one another for mutual support. The location of the town itself in an area of poorly drained upland, rather than in rich and deep lowland soil reflects the loss of Pequot control over their more productive tribal lands in the years following the Pequot War.

Colonial records show that the Pequots asked to move to Mashantucket. These documents also show that Pequots had few choices in the matter. Located alongside lands belonging to often-hostile non-Indians, the increasingly infertile soils at Noank gradually lost their ability to supply needs of Pequot people. Having lost their sovereignty following the end of the Pequot War, they were forced to submit to Connecticut laws. Finding their best lands taken up by settlers, Pequots, like other southern New England Indian people, chose to move to remote areas offering inaccessibility and easy escape in the event of unwanted intrusion by press gangs, provincial recruiters, or creditors. Indiantown filled all these requirements until inducements offered by the Brothertown Movement convinced most Pequot people to move west by the final decades of the eighteenth century.

Nineteenth-century American writer Herman Melville was not alone in regarding the Pequots as an extinct tribe when he wrote in his novel *Moby-Dick or the Whale*, "Pequod, you will no doubt remember, was the name of a celebrated tribe of Massachusetts Indians, now extinct as the ancient Medes." The events of the Pequot War have been recounted in schoolrooms across America for more than 200 years. Those hearing the brutal details of the conflict have no difficulty in believing that the Pequots were destroyed by their colonial adversaries. Derided in colonial documents as archetypically violent "savages," their defeat has become a metaphor for the fate of all Indians resisting colonial expansion.

The survival and modern resurgence of the Mashantucket community gives the lie to these and other images of Pequot people in particular and all Indians in general. Information contained in the archaeological record of Pequot survival and resurgence at Mashantucket is providing vital data necessary to combat negative stereotypes depicting the Pequots and other Indians as "savages" or "vanishing peoples."

REFERENCES CITED

Grumet, Robert S.

- 1995 *Historic Contact: Indian People and Colonists in Today's Northeastern United States in the Sixteenth Through Eighteenth Centuries*. University of Oklahoma Press, Norman.

Hauptman, Laurence M. and James D. Wherry, eds.

- 1990 *The Pequots in Southern New England: The Fall and Rise of an American Indian Nation*. University of Oklahoma Press, Norman.

McBride, Kevin A.

- 1990 The Historical Archaeology of the Mashantucket Pequots, 1637-1900: A Preliminary Analysis. In *The Pequots in Southern New England: The Fall and Rise of an American Indian Nation*, edited by Laurence M. Hauptman and James D. Wherry, pp. 96-116. University of Oklahoma Press, Norman.

- n.d. Mashantucket Pequot Indian Reservation Archaeological Survey Field Notes. Unpublished manuscript on file, Laboratory of Archaeology, University of Connecticut, Storrs.

McBride, Kevin A. and Robert S. Grumet

- 1992 Mashantucket Pequot Indian Reservation Archaeological District National Historic Landmark. Nomination form on file, Archeology and Ethnography Program, National Park Service, Washington, D.C.

**AS THE WHEEL TURNS:
CHANGING PERSPECTIVES ON PROPERTY RIGHTS AND CONNECTICUT
HYDROPOWER**

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INTRODUCTION

The 1970s were, for the most part, an unremarkable decade with awful fashions (bellbottoms) and forgettable music (disco). However, the mid-decade introduced Connecticut's archaeologists to the challenges and complexities of the state's industrial heritage. Independently, David A. Starbuck (1975, 1977, 1981) and Frederic W. Warner (Connecticut Archaeological Survey 1974; Bellantoni 1975) initiated archaeological study of the Eli Whitney factory site (Hamden) and the Waterbury Brass Company mill site, respectively. These endeavors sought archaeological insights that might guide future efforts for on-site interpretation. Unfortunately, only the Eli Whitney factory site has realized its museum potential. Starbuck's and Warner's pioneering investigations of the state's industrial heritage reflected the growing interest of historians and archaeologists working in the Northeast to better understand the technological processes, industrial innovations, and the all-encompassing social and cultural transformation of the American landscape.

Unlike prehistoric and historical archaeology, industrial archaeologists rarely focus upon data which may be derived from traditional excavation-based research strategies. Rather, industrial archaeology is an eclectic research discipline wherein archival information, oral history, subsurface remains, and extant structures are examined in order to understand industrial processes and engineering technology. Connecticut research is noteworthy for the success of both a "dirt" archaeology approach (Starbuck 1975, 1977, 1981; Bartovics 1982; Crain and Saltus 1987; Gradie, *et al.* 1981; Worrell 1984) and the in-depth study of extant structures (Clouette and Roth 1991; Darnell 1979; Esperdy, *et al.* 1992; Roth 1981; Stewart 1993).

Frederic W. Warner introduced the authors to industrial archaeology through his invitation to participate in his field studies of the Waterbury Brass Company site. In addition, Fred provided us a consulting arrangement with the Connecticut Archaeological Survey regarding the identification and evaluation of the Hugh Cain Fulling Mill site (Warner 1975). This "contract archaeology" project provided the authors with our initial research outside of the academic world. (Subconsulting to Fred Warner is an adventure which must be experienced firsthand to truly appreciate his unique management style!)

CONNECTICUT MILL PONDS: A HISTORICAL PERSPECTIVE

Industrialization in eighteenth- and nineteenth-century Connecticut was in large part a rural, rather than an urban phenomena. Because industry focused upon waterpower, early industrial development was spread over the countryside, rather than concentrated in cities. This created a unique rural landscape that includes numerous dams whose impressive stonework today enhances the picturesque quality of countless millponds. Today's use of extant millponds, whether as scenic viewsheds or small-scale marinas and swimming areas, contrasts sharply with the nineteenth-century reality of fluctuating water levels and exposed

mud flats. These surviving mill ponds once powered the textile and paper mills, metal works, and machine shops that established the industrial reputation of the Northeast.

Today, many historic dams are being retrofitted as small-scale hydroelectric generating facilities. This fundamental refocusing of perspective on the use of water has caused conflict and controversy regarding historic dams throughout Connecticut. These dams are, at the moment, the focus of competing interests, including among others, entrepreneurs proposing to revive hydropower operations; developers constructing waterfront residences or promoting recreational tourism; environmentalists intent on safeguarding aquatic resources; and historic preservationists protecting scenic landscapes. In addition, state and federal agencies are empowered to oversee these structures, which in some cases have not received significant maintenance in over 50 years. These groups possess very different perspectives on the value and significance of historic dams and are often mutually antagonistic.

Industrial archaeologists must master a complex, tedious, and often contradictory compendium of legislative and regulatory approaches that deal with historic preservation, environmental protection, and engineering safety in order to effectively and confidently provide technical guidance concerning the many proposed adaptive reuses of nineteenth-century dams and their associated hydropower appurtenances. Three general areas of law exist which are of primary relevance regarding the potential redevelopment or reactivation of extant dams and historical hydropower equipment. These include:

- traditional common law which governs the use of water resources;
- eighteenth- and nineteenth-century legislation specifically designed to encourage water-dependent industrial development;
- twentieth-century environmental and historic preservation laws designed to protect biological diversity, scenic values, and cultural resources (the latter include industrial archaeological sites of historic and engineering merit).

All development of aquatic resources is regulated by statute and custom referred to generically as riparian law. Under common law, the banks and beds of all navigable waterways are the personal possession of the abutting property owners. However, the flow of water cannot be owned and is considered a public resource. As this valuable resource has many competing and often mutually incompatible uses, common law recognizes the right of use only with regard to the rights of potential users whose interests are frequently dissimilar and conflicting. Thus, a dam owner could be required to lower his gates to facilitate seasonal fish runs or conversely, be prevented from raising the height of his dam and flooding the meadow of an upstream farm (Reis 1967). The intent of common law was to strike a reasonable balance between the rights of all would-be users.

Balance however occurs within a cultural context. Resources and their manner of exploitation are culturally determined. This insight forms the core of Cronon's (1983) study of the history of the New England landscape. Striking a balance between competing uses requires achieving equilibrium between competing definitions of usefulness, that are created by different world views. Handsman (1978:14-15) has noted that an individual constructing a waterpowered mill views the landscape with a set of culturally conditioned categories which he uses to solve the problems of placement (what topography is best suited to the operation?), operation (how is water to be conveyed to the mill?), and utility (how deep to dig the wheel pit?). The miller's landscape clashes with others whose concerns may be the integrity of freshwater meadows or the maintenance of fish migrations.

As Cronon (1983) demonstrates, sometimes the distinctions of competing world views are so great as to be unbridgeable and one view comes to dominate at the expense or even extinction of those holding contrary perspectives. The dichotomy of the world view of both the waterpowered industrialist and the farmer ran deep in early New England. In broad economic terms, the dichotomy was between resource "extractors" and resource "converters;" that is, between those who used and consumed resources and those who conceived them as a commodity to be put to other uses. For the first 150 years, resource extractors, that is, agricultural interests, dominated.

The Saugus Ironworks, one of the earliest examples of capital-intensive waterpowered industry in New England, was an early victim of this conflict. Struggling financially and disorganized by internal quarreling, it failed to recover from the May 1682 breaching of its dam by a mob from the town of Reading, Massachusetts. Town residents had previously and unsuccessfully petitioned the General Court to remove the dam, claiming that it prevented fish that had been "a great refreshing" for food from ascending the Saugus River to ponds and streams "where they have their natural breeding place" (Hartly 1957:262-263). Unsuccessful in this litigative approach, they undertook direct action to resolve their concerns.

Fish were a major food source in preindustrial New England. Bowen (1990:121-122) has demonstrated that, in the cycle of seasonal food availability that characterized the agricultural economies of the seventeenth and eighteenth centuries, fish was often the only fresh meat available during the late spring. As a result, several cultural expectations and associated economic interests had formed around this natural resource. Salmon fishing in the eighteenth century on the Willimantic and Shetucket rivers in eastern Connecticut was "a much relished and exciting sport" (Bayles 1889:274). Bowen (1990) has documented eighteenth-century commercial fish weirs on the Connecticut River. The recent discovery of weir remains on the Quinebaug River suggests similar commercial operations on other major Connecticut streams. Any attempt at an alternate use of rivers and streams which restricted this natural resource was bound to generate opposition.

Discussing the failure of eighteenth-century industrial interests in Brooklyn, Connecticut, a local nineteenth-century historian recalled that "in those times people were apposed to having any dams on the river below Pomfert Falls (now Cargill Falls in the town of Putnam) on account of Salmon running up stream, hence the grain mill interests of the town finally migrated to the valley of Blackwells Brook" (Arnold 1906:12).

Resolving fish-related concerns left would-be industrialists to confront farmers, specifically over the issue of freshwater meadows. This natural resource produced a nutritious and highly valued hay, which was a mainstay for New England's animal-based agricultural economy. New England's glaciated landscape was cluttered in the seventeenth and eighteenth centuries with upland freshwater meadows that were one of the major drawing powers pulling settlement inland (Russell 1976:275-277).

On smaller tributaries to main rivers, stream flow is more variable and reservoirs were often necessary to ensure a continuous water supply for the operation of waterpowered mills. Reservoirs, however, flooded low-lying meadows. Farmers objected and often restricted flowage for mill ponding to those months when the meadows were nonproductive. This limited the operation of waterpowered mills to a seasonal schedule. The Elliott sawmill on Auger Brook in Thompson, Connecticut, reflects this situation. Erected in 1795, the enterprise consisted of a 20 acre reservoir, located in the midst of a much larger upland freshwater meadow, and a smaller mill pond about one-quarter acre in size at the sawmill approximately 1,000 feet downstream. The system operated by releasing sufficient water, from the large upper pond into the smaller lower pond, to power the mill for a day. This approach conserved water through upstream storage (while permanently flooding the meadow), rather than passing it unused over the mill dam. The conditions under which the mill was to operate were explicitly outlined in title deeds. For example, the transfer of a partial interest in the mill in 1817 states that the owners could "... occupy and flow the meadow as has been usual, and the pond below the meadow, from the first day of October to the 10th day of April annually" (McBride *et al.* 1980). For the remainder of the year, the meadow was to be drained.

The balance that the law and tradition struck in early New England reflected the dominant interests of colonial society and its perceived economic well-being. Although waterpowered enterprises were numerous, their interests were viewed as secondary in a landscape that was dominated by fence and pasture.

The advent of industrial capitalism changed the emphasis on stream use and resource "converters" began to dominate. In New England, the balance struck by common law began to shift in the eighteenth century under a series of laws known collectively as "Mill Acts," the first of which was passed in

Massachusetts in 1714. The focus of relevant statutes shifted from the mutual rights of all users to encouragement of the use that produced the most public benefit. Industry was viewed as the "better" public good; the environmental disruption that mills created was outweighed by the economic benefits they conferred. Thus, mill owners enjoyed a preferential status in any conflict over use as the industrial interest in a waterway was considered preeminent (Hunter 1991; Silvio and Artemel 1987).

Concurrent with the "Mill Acts," a change occurred in the legal concept of a stream. While the course of running water remained a public resource, the volume of water within the stream, if dammed and stored, became private property. As such, a mill owner could demand unimpeded passage for a volume of water passing from his upstream reservoir to his mill. The bias of "mill rights" against other rights reached its extreme in the nineteenth-century when in New England, mill owners had what amounted to eminent domain over the use of a waterway, many of which were regulated solely for the benefit of industrial interests. A mill owner could flood a meadow, or impede the migration of fish at his discretion, solely to implement his right to power his mill. Farmers and others objected, but litigation did not reverse this trend; rather, it created a body of legal precedents which entrenched industrial interests deeper into the framework of riparian law.

Technological change ultimately rendered the controversy moot. With the introduction of coal and oil-fired electrical generating facilities, the waterpowered mill became an anachronism and industry migrated to urban centers. Legal and social concerns turned elsewhere and the ownership rights of riparian resources by industrialists became a non-issue.

However, the industrially-modified landscape remained. The immediate response to the abandonment of waterpower was not to change the landscape, but to withdraw from it. Mills and factories closed, and industry left for more advantageous locations. However, the nineteenth-century industrial landscape of rural New England survived not so much as a palimpsest, but as an abandoned landscape. It was a decayed and dilapidated landscape, its farms and their field systems overgrown, and its industrial villages in decline, but its physical structure still in place, slowly going to ruin. The post-industrial landscape's primary characteristic was the revival of the presettlement temperate hardwood forest. The remains of a "lost civilization" lay hidden in the woods.

Paradoxically, this ultimately made the landscape valuable again. Change finally arrived in the second half of the twentieth century in the guise of suburbanization. The industrialist was replaced by the developer intent on creating two acre "estates" amid the revived forest. His customer being an outward-sprawling urban population that preferred commuting daily between a semi-rural residence and an urban workplace. The ponds, reservoirs, dammed rivers, and flooded meadows that once represented both the despoiling of a rural way of life and the source of industrial power were recategorized as "rural ambiance."

The remnant industrial landscape is now populated by people who may be divided into two broad groups: 1) a remnant rural population descendant from the nineteenth-century entrepreneurs and workers who created and sustained the industrial landscape, and 2) an urban population spreading from the state's metropolitan centers whose lifestyle recognizes the wooded rural landscape as an attractive and congenial counterpoint to city life. The overriding interest of the newly-arrived suburban population is in maintaining the existing landscape. Accordingly, in the last quarter of the twentieth century, ecological and historic preservation issues have supplanted industrial uses as the major riparian concern.

Legislation and legal precedents have developed a new concept of interest in which the "health" of a waterway is the overriding variable in adjudicating its best use (Gradie and Poirier 1988). Thus, an enterprise proposing to utilize a waterway must demonstrate that it will not have an adverse affect on, among other factors, recreational potential, water quality, unique scenic beauty, or the fish and natural species that depend on it. Ironically, it is a concern for environmental protection that has caused some environmentalists to assess the power potential of abandoned nineteenth-century mill sites as a preferred alternative to nuclear generated power. The result has been new legislative efforts by the federal and state governments to promote the reactivation of small scale industrial sites to produce hydroelectric power.

Federal regulations governing the establishment of small scale hydropower facilities are incorporated within the Public Utility Regulatory Policies Act of 1978 (Hunt and Mohsberg 1991:23-27). The Act

created incentives to encourage renewable energy developments. The incentives included tax relief benefits and regulatory changes, such as exempting small producers from many of the Federal Energy Regulatory Commission's rules that guide the construction of electrical generating plants. A small producer was defined as possessing a generating capacity of eighty megawatts or less.

Under Federal Energy Regulatory Commission regulations, anyone may file an application for a permit or license to retrofit an extant dam irrespective of who legally owns it. These regulations reflect the assumption that the majority of potential sites are currently owned by utility companies or large industrial entities which would not find it either profitable or convenient to invest in the redevelopment of their facilities. The regulations were purposely crafted to promote small scale hydropower entrepreneurship and to guarantee access to extant structures to those potential investors willing to assume the economic risks.

Anyone may legally file for a preliminary hydropower development permit which authorizes the required investigation of the potential of a particular dam site for up to three years, free of competing applications. The would-be developer must undertake a site appraisal of potential environmental consequences, structural integrity of extant remains, estimated development costs, and projected economic benefits. If the information compiled from the site appraisal investigations are positive, more detailed site development studies are required. These include the identification of the optimal design and configuration for buildings and equipment, the calculation of development costs, and the establishment of investment and construction schedules. Since these studies can be expensive and demand considerable expertise, specialized consultants are often employed. As an incentive to encourage small scale hydropower projects, the Federal Energy Regulatory Commission has drafted comprehensive guidance and resource materials for developers who may attempt in-house analysis of site-related economic and environmental variables. As noted earlier, Federal Energy Regulatory Commission regulations provide for the awarding of site permits irrespective of actual ownership of extant facilities. The application process is somewhat analogous to that of staking a claim in a gold rush.

Federal Energy Regulatory Commission's regulations mandate applicants to comply with the National Historic Preservation Act of 1966. In turn, Section 106 of the Act requires consultation and review by the Advisory Council on Historic Preservation (an independent federal agency) and the respective State Historic Preservation Office in order to assess whether the proposed undertaking would affect historic or archaeological properties, either listed on or potentially eligible for the National Register of Historic Places. National Register status is determined through a professional evaluation of a specific site or property in relation to criteria of significance (36 CFR 60) developed by the National Park Service. If a proposed hydropower project may adversely affect a National Register resource (eligible or listed), in-depth coordination among the State Historic Preservation Office, the Advisory Council on Historic Preservation, the Federal Energy Regulatory Commission, and the would-be developer should occur. An examination of all alternatives to minimize affecting historic resources through avoidance or redesign is the primary historic preservation concept guiding such consultations. However, neither the National Historic Preservation Act of 1966 nor the Advisory Council on Historic Preservation's implementing regulations, 36 CFR 800, require that cultural resources be ultimately protected, documented, or salvaged. The Act only stipulates that National Register status be evaluated and that appropriate state and federal agencies be provided with a meaningful opportunity to review and comment on proposed projects that are funded, assisted, licensed or permitted by other federal agencies.

A number of successful retrofitting of nineteenth-century industrial sites has occurred in Connecticut. The rehabilitation of historic dams and related hydropower equipment at the American Thread Company (Raber 1989) and the Dayville Mills (Figure 1) are particularly notable. Conversely, the installation of new generating facilities at the Ousatic Water Power Company dam in Derby and Shelton (Silvio and Atremel 1987) required demolition of its historic canal lock (Figure 2).

Additional historic dams and impoundment systems throughout southern New England are intact and could be revived. However, a major obstacle to such attempts is the alternate uses to which these ponds have been put (or at least perceived as having been put) since their abandonment as mill-related reservoirs. Recreation, conservation and aesthetics have their constituencies which often are vocal opponents to



Figure 1. Hydropower rehabilitation at Dayville Mills (photo courtesy of Summit Hydropower).



Figure 2. Canal lock associated with the Ousatonic Water Power Company dam which was demolished to facilitate new hydropower facilities.

reviving the original purposes for which these systems were constructed (Figure 3). The fact that these are artificial systems with structures and an architecture appropriate to the specific purpose for which they were designed, and which must be maintained if they are to continue to safely perform their current minimum function, is rarely a consideration. The outline of a coming debate (and local controversies) is

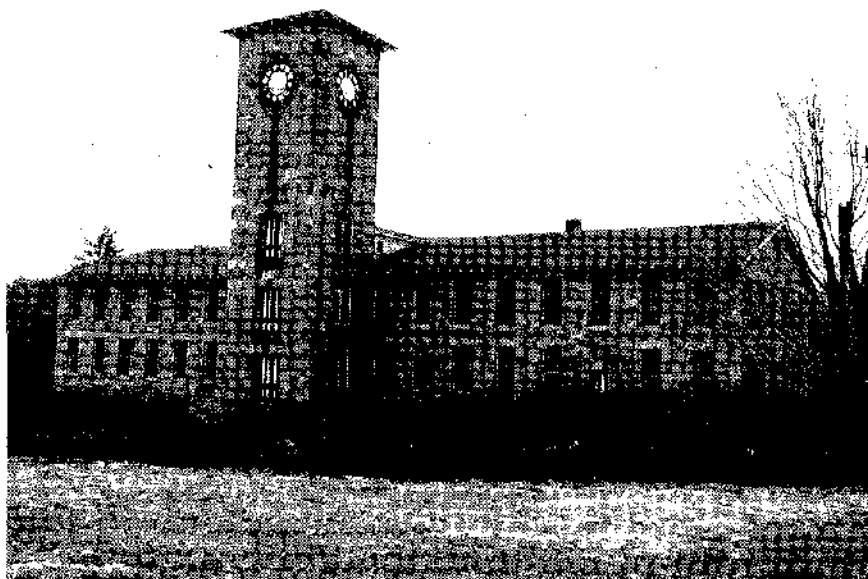


Figure 3. Proposals for hydropower development at Kirby Mill in Mansfield Hollow have generated a decade of debate on historic, archaeological, and aesthetic issues, rather than kilowatts.

apparent as would-be hydropower developers continue to assess the potential of historic industrial sites and impoundment systems. Recent proposals to revive generating facilities on the Yantic River at Yantic Falls (Norwich) have been challenged on aesthetic and environmental grounds (Warzecha 1991). A similar controversy developed regarding the proposed industrial reuse of the Cargill Falls in Putnam. In this situation, the would-be developer and opponents alike have cited legal and historical justifications for their respective arguments. Following the withdrawal by the Federal Energy Regulatory Commission of its license for the hydropower proposal, the City of Norwich has pursued the development of an industrial archaeological heritage park; preliminary investigations have revealed the archaeological integrity and industrial significance of the Yantic Falls area (Raber *et al.* 1995). In contrast, the Cargill Falls debate was resolved by locating the hydropower operations within the historic mill structures.

SUMMARY

A society's world view is reflected by the way in which it orders its physical landscape. The eighteenth-century New England landscape was rural. The temperate hardwood forest was replaced by an agricultural landscape of open fields and constricted woodlots dominated by isolated, scattered farms. Numerous political, economic, and social institutions linked these rural farms with the broader community, especially the economy of the British imperial system.

Revolution, both political and technological, changed that. The nineteenth-century landscape reflected a developing indigenous industrial society. In the industrialist world view, water was a

commodity and the cultural landscape reflected this perspective. Population was concentrated into urban centers or rural industrial villages. Streams were obstructed with myriad artificially created ponds and lakes that drowned meadows and blocked fish migrations, but which powered an ever increasing industrial establishment.

Understanding the historic, cultural and legal contexts associated with Connecticut's waterpower industries suggests a temporal model of site location and waterpower development. Early mills are situated on small streams, tend to be small-scale, and their operation was restricted by their proximity to other resources (i.e., migratory fish and freshwater meadows). Later mills were situated on large rivers and their tributaries. These mills were large-scale and their location was placed so as to best optimize the power potential of falling water, irrespective of its impact upon other natural resources.

Hydraulic systems designed to control water within a drainage area will also reflect variability through time. Early systems are small, localized, and often seasonal with perhaps only a single reservoir serving to impound water for one or two mills. Later systems were large, regional, and control volumes of water to the extent that major aquatic features were created; all other competing water-dependent uses will have been excluded. This conceptual model is normative and considerable variation should however be expected.

Current economic and legal constraints suggest the relative sequence of preferred redevelopment of historic hydropower sites. In general, twentieth-century hydropower reactivation will progress in a reverse order to the historic mill development pattern. The most recent (i.e. late nineteenth-century) mill sites will be reactivated for hydropower first because of their larger-scale. Early mill sites will be considered only as the availability of later ones diminishes and only to the degree that they might offer a sufficient return on investment through electric power generation. As many of the earlier mills were low-powered, seasonal operations, their aggregate twentieth-century redevelopment potential is considerably less than for the later nineteenth-century sites. In addition, the issue of the reactivation of the nineteenth-century reservoir system has yet to be addressed. Many hydropower sites, particularly those located on secondary streams which under current conditions are economically marginal, could become commercially viable if their upstream reservoirs were to be revived (Gradie and Poirier 1991:47-66).

The twentieth-century legal framework and regulatory requirements that govern the proposed reutilization of historic millponds for small scale hydropower are exceedingly complex. Successful incorporation of archaeological and historic preservation concerns into the small scale hydropower development process requires considerable knowledge and expertise on the part of industrial archaeologists. Achieving an effective balance between cultural resource management, environmental protection, and project objectives depends on how well archaeologists understand:

1. the functional interrelationship of surviving industrial structures;
2. the nuances of federal and state regulatory statutes; and,
3. the technical requirements of the proposed hydropower operation.

The industrial archaeological community must also be vigilant and outspoken concerning future federal and/or state legislative actions. Lucke's (1987:221) observation that "the unfettered rights of landowners have become subordinate to the needs and goals of society as a whole" may soon be reversed. The 1990s political perspective regarding the sacrosanctness of property owner rights to unrestricted use, or appropriate compensation, may result in the wholesale repeal of federal regulatory authority or the adopting of a "politically-correct" hands-off policy by federal regulatory agencies. A renewed debate appears forthcoming.

Conversely, local neighborhood organizations and environmentalists often emphasize that proposed hydropower reactivation of historic mill sites will irrevocably destroy archaeological resources. This approach frequently represents an attempt to insert preservation of a "scientific resource" into the regulatory review process, when the genuine objective is more-often-than-not to outright stop any proposed hydropower development, rather than concern for archaeological preservation. Archaeologists should care-

fully reconsider any acquiescence with this often heavy-handed and emotionally-wrought approach, which frequently may not represent the best interest of either archaeology or the archaeological resource. Indeed, the misuse of archaeology as a potential leverage in the regulatory process may generate the perspective of archaeology as another obstructionist, red-tape bound, and costly (and therefore unneeded) program. In contrast, a well thought-out approach that provides for archaeological mitigation and which assuages the fears of would-be developers may be of greater value to archaeology, than a project-stopping preservation strategy which allows a historic industrial site to continue its natural process of collapse into ruin.

That is not to say however, that preservation is not in the long-term interests of archaeology. Indeed, archaeologists and historic preservationists often share common goals. Nonetheless, archaeologists must balance a conservation ethic and a destructive scientific research *modus operandi*. Archaeologists must independently establish what critical information needs to be recovered, develop the appropriate research strategies, and ensure their pro-active participation at the earliest opportunity in the hydropower regulatory approach, rather than attempt *post facto* to influence the decision-making process. As the debate regarding the future use of the historic dams and mill sites of New England intensifies, some difficult and irrevocable decisions will be made. Industrial archaeologists, as a community, must determine if they are politically and intellectually ready to meet this challenge.

REFERENCES CITED

- Arnold, H.V.
1906 *The Making of Danielson*. Published by the author. Larimore, ND.
- Bartovics, Albert F.
1982 *The Archaeology of Daniels Village: An Experiment in Settlement Archaeology*. Ph.D. dissertation, Department of Anthropology, Brown University. University Microfilms, Ann Arbor.
- Bayles, Richard M.
1889 *History of Windham County, Connecticut*. W.W. Preston Co., New York.
- Bellantoni, Nicholas F.
1975 *Survey of Waterbury Brass Works*. Paper Presented at the Archaeological Society of Connecticut Annual Meeting, New Britain.
- Bowen, Joanne
1990 *A Study of Seasonality and Subsistence in Eighteenth Century Suffield, Connecticut*. Unpublished Ph.D. dissertation, Department of Anthropology, Brown University, Providence.
- Clouette, Bruce and Matthew Roth
1991 *Connecticut's Historic Highway Bridges*. Connecticut Department of Transportation, Hartford.
- Connecticut Archaeological Survey Inc.
1974 *An Archaeological Survey of the Waterbury Brass Company Mill*. Unpublished ms., Connecticut Archaeological Survey Inc., New Britain.
- Crain, J. Larry and Allen R. Saltus, Jr.
1987 *Spruce Brook Mill: Simeon North's Pistol Factory, Berlin, Connecticut*. *American Society of Arms Collectors* 57:61-70.
- Cronon, William
1983 *Changes in the Land: Indians, Colonists and the Ecology of New England*. Hill and Wang, New York.
- Darnell, Victor
1979 *Lenticular Bridges from East Berlin, Connecticut*. *Industrial Archaeology* 5(1):19-32.

- Esperdy, Gabrielle M., Corinne Smith and Todd Thibodeau
 1992 Connecticut's Merritt Parkway: History and Design. Historic American Buildings Survey/Historic American Engineering Record, National Park Service, Washington, D.C.
- Gradie, Robert R. and David A. Poirier
 1988 Small Scale Hydropower Development and Connecticut's Rural Industrial Heritage. In *Historical Perspective as a Cultural Resource Management Approach. Planning for the Changing Rural Landscape of New England: Blending Theory and Practice.* pp. 246-257. New England Center, Durham, NH.
 1991 Small-scale Hydropower Development: Archeological and Historical Perspectives from Connecticut. *Industrial Archaeology* 17(2):47-66.
- Gradie, Robert R., Mary G. Soulsby and Kevin A. McBride
 1981 Eastern Highlands Water Power Survey. *Archaeology Research Monographs* No. 21, Public Archaeology Survey Team Inc., Storrs.
- Handsman, Russell
 1978 Sawmills and Irishmen: An Explanation of the Historic Cultural Resources of Sawmill Road, Danbury, Connecticut. Unpublished ms., American Indian Archaeological Institute, Washington, Connecticut.
- Hartly, F.N.
 1957 *Iron Works on the Saugus.* University of Oklahoma Press, Norman.
- Hunt, Richard and Judith Mohsberg
 1991 *The Status of Hydropower Regulations and Development.* Alternative Sources of Energy Inc., Millica, MN.
- Hunter, Louis C.
 1991 *A History of Industrial Power in the United States 1780-1930.* University Press of Virginia, Charlottesville.
- Lucke, Thomas W.
 1987 Trends and Current Issues in Cultural Resource Management Law. In *Cultural Resources Management*, edited by Ronald W. Johnson and Michael G. Schene, pp. 219-235. Robert F. Kreiger Publishing Company, Malabar, Florida.
- McBride, Kevin, Nicholas Bellantoni, Mary G. Soulsby and Robert R. Gradie
 1980 Phase I Archaeological Reconnaissance, West Thompson, Connecticut. *Archaeological Research Monograph* No. 14, Public Archaeology Survey Team Inc., Storrs.
- Raber, Michael S.
 1989 Willimantic Linen Company: Hydro-electric Facilities. Preliminary Draft Submittal of Field Documentation. Unpublished ms., Raber Associates, Glastonbury.
- Raber, Michael S., Robert B. Gordon, Patrick M. Malone and Stephen P. Carini
 1995 Historical and Archaeological Study, Upper Falls Heritage Park, Yantic River, City of Norwich, Connecticut. Unpublished ms., Raber Associates, Glastonbury.
- Reis, Robert I.
 1967 *Connecticut Water Law: Judicial Allocation of Water Resources.* Institute of Water Resources, University of Connecticut, Storrs.
- Roth, Matthew
 1981 *Connecticut: An Inventory of Historic Engineering and Industrial Sites.* Society for Industrial Archaeology, Washington, D.C.
- Russell, Howard S.
 1976 *A Long Deep Furrow: Three Centuries of Farming in New England.* University Press of New England, Hanover.
- Silvio, Terri and Janice Artemel
 1987 Ousatonic Water Power Company Dam and Canals/Derby Dam; Shelton Canal; Derby Canal. Unpublished ms., Engineering Science Inc., Arlington, VA.

Starbuck, David A.

- 1975 Industrial Archaeology at the Site of Eli Whitney's Gun Factory. In *The Completion of Independence in New Haven*. pp. 41-47. New Haven Colony Historical Society, New Haven.
- 1977 Archaeological Research at the Eli Whitney Factory Site. *Journal of the New Haven Colony Historical Society* 25(1):6-27.
- 1981 Industrial Archaeology and the Eli Whitney Controversy. *Journal of the New Haven Colony Historical Society* 28(1):35-42.

Stewart, Robert C.

- 1993 The New York, New Haven & Hartford Railroad, Cos Cob Power Plant. Unpublished ms., Historic American Engineering Record, HAER No. CT-142A, Washington, DC.

Warner, Frederic W.

- 1975 An Intensive Survey of Two Archaeological Sites Identified by a 1974 Reconnaissance Survey of the Norwalk Flood Control Area. Unpublished ms., Connecticut Archaeological Survey Inc., New Britain.

Warzecha, Kathy

- 1991 Yantic Falls in Norwich. *Connecticut Preservation News* 14(6):1-2.

Worrell, John

- 1984 Hervey Brooks' Pottery, Goshen, Connecticut. In *Unearthing New England's Past: The Ceramic Evidence*, pp. 57-62. Museum of Our National Heritage, Lexington.

ARCHAEOLOGICAL SURVEY OF THE MCLEAN GAME REFUGE, GRANBY AND SIMSBURY, CONNECTICUT

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PREFACE

It is sometimes said that the more you learn, the less you know. This apparent paradox is true in the following narrow sense: the more you learn, the more you realize how much more there is to know than you initially thought. So, indeed, you do seem to know proportionally less than when you started.

Would that we all recognized this when we entered graduate school. We all knew proportionally so much more then. All we needed — or so we thought — was just a little polishing and we would be ready to set the archaeological world on its ear.

For instance, when one of us (Feder) entered graduate school, the feeling among many seemed to be that actual archaeological data was ancillary to what was really important in the field: THEORY. Yup, data without theory was useless. Archaeological fieldwork was necessary only to test the implications of our spectacularly explanatory theories. I can't remember anymore what any of those theories were, but they were of enormous anthropological value. I guess.

Fortunately, there were scholars like Fred Warner and Doug Jordan, who were more than up to the task of gently — and unremittingly — showing us just how much we didn't know and needed yet to learn. In word and in deed, they showed us that theory without data was no better than data without theory. Theory was great, they told us, but you still need to dig test pits. Models and simulations, hexagon lattices and probability matrices—these were interesting tools to help us understand and interpret the data — but without data, what good could they be?

And now, ironically — or perhaps not — those of us who eschewed inductive research and didn't see the necessity of collecting reams of data, are now spending much of our careers doing precisely this. And in no small measure, our research has been built upon the foundations laid by Fred and Doug. We may still have philosophical disagreements with them — as colleagues often do — on issues of method and, yes, theory. Certainly, we are all still attempting to do more than just *describe* Connecticut's archaeological past; we still hope to be able to *explain* it. But we have come to recognize that in order to accomplish this daunting task there is still much work that needs to be done in the field, collecting data. With this in mind, we present you with an unflinchingly and unapologetically descriptive exposition on our recent work — an archaeological survey conducted in the McLean Game Refuge.

BACKGROUND

Outside of Fairfield County's Gold Coast, the Farmington Valley contains some of the most valuable land in Connecticut. It comes as a surprise to many, therefore, that a place like the McLean Game Refuge exists here. Located in Simsbury, Granby, and in a small corner of Canton, the Refuge includes about 3500 beautiful, very valuable, undeveloped acres of essentially unspoiled habitat (Figure 1).

The Refuge was the dream of George F. McLean. McLean was born in Simsbury in 1857. In his early adult years he worked as a newspaper reporter, a bookkeeper at Trinity College, and eventually as a lawyer in Hartford. McLean entered into the world of politics in 1883, serving in the Connecticut House

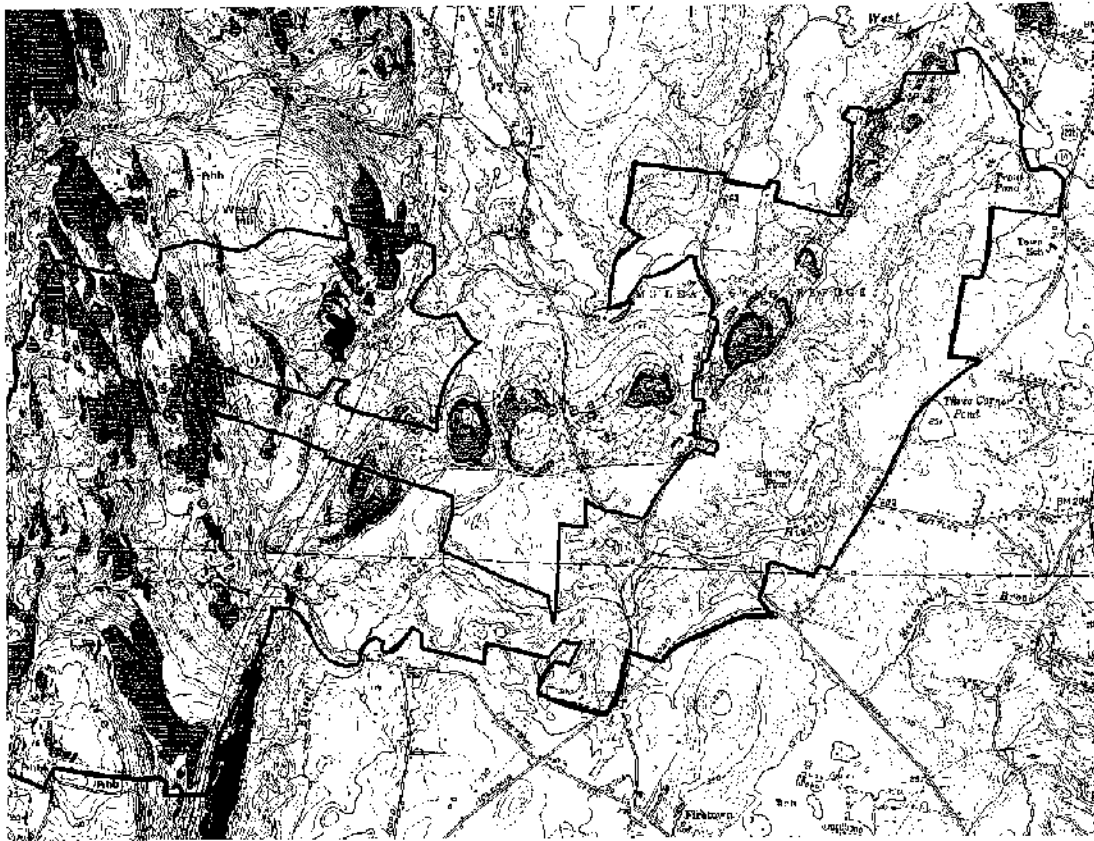


Figure 1. U.S.G.S. topographic map of the McLean Game Refuge.

of Representatives from 1883 - 1884 and later as U.S. attorney for the state between 1892-1896. A popular, well-liked, and effective politician — when that was not a pejorative term — McLean went on to serve as governor of Connecticut between 1901 and 1903, and then as United States senator from 1911 - 1929. With the exception of his years in Washington, D.C. serving in the Senate, McLean lived in Simsbury for his entire life.

Along with his interest in politics, McLean was a lover of nature and the great outdoors. Combining these two foci of his life, McLean sponsored a number of bills supporting wildlife conservation during his tenure in the U.S. Senate. Back in Connecticut, combining his love of nature with his financial resources, McLean began buying up mostly contiguous tracts of land in northern Simsbury and southern Granby. He maintained the land as his own private hunting and fishing preserve where he spent much of his free time, bringing friends and associates, many of whom were among the politically powerful in America in the early decades of the twentieth century. An American president, Calvin Coolidge, was among those who hunted deer in the forested uplands and fished for trout in the cascading streams of the preserve.

McLean left most of the area as he found it, allowing cleared land to return to its naturally forested state. He did build two dams along Bissell Brook, creating two large ponds in the northeastern section of the game preserve. On the shore of one of these ponds he built a hunting cabin; on the other he had constructed a roofed log lean-to.

As McLean aged, he became concerned for the fate of his hunting preserve. He was committed to ensuring that even after he was gone the area would be maintained in its wild state. Leaving the rest of his estate to family members, McLean dealt separately with his hunting preserve land, stipulating that after his death the area would no longer be used for hunting and fishing but would become a game refuge where:

trees can grow unmolested by choppers and trout and birds and other animal life can exist unmolested by hunters and fishermen, a place where some of the things God made may be seen by those who love them and who may find in them the peace of mind and body that I have found.

In his will McLean also established an endowment, the interest from which would pay the bills (in perpetuity) for such an ambitious undertaking. For more than sixty years, the McLean Fund has enabled the McLean Game Refuge to employ a caretaker, pay its property taxes, maintain its trails, bridges and other facilities, and to remain open to the public since McLean's death on June 6, 1932. There has never been an admission fee. The McLean Game Refuge is a wonderful place where trees, fish, birds, other animals, and beginning in the summer of 1993, archaeologists are able to go about their business "unmolested."

The authors first approached the current caretaker of the Refuge, Steve Paine, in 1992 about the possibility of conducting a low impact archaeological survey in McLean. Steve was almost immediately an enthusiastic supporter of the concept; he perceived the archaeological survey as entirely compatible with Senator McLean's vision for the Refuge — as well as being fully in accord with contemporary stewardship of the lands. Without Steve's support and cooperation, the survey could not have been conducted. With Steve's gracious assistance, the Board of Trustees of the McLean Fund responded positively to our request to conduct an archaeological survey on Refuge property.

RATIONALE

The McLean Game Refuge possesses a number of different habitats. These include: wetlands, flood plains, alluvial and kame terraces, and uplands. These varied habitats would have afforded prehistoric human groups a wide range of food resources on a seasonal basis. It seemed likely that the area would have been exploited by the prehistoric inhabitants of the Farmington Valley and that the Refuge would possess significant archaeological potential. Because the Refuge is located in the interior of the valley, approximately 3.2 kilometers from the Farmington River, its investigation also provides an opportunity to examine an element of aboriginal settlement that is poorly understood. Recognition of the differences in the types and sizes of sites, as well as in the cultural materials recovered in the interior uplands of the Farmington Valley when compared to those located along the Farmington River, can give us a more complete picture of aboriginal lifeways in the Valley as a whole. With this information we will also be in a better position to understand the possible relationships of the residents of the Farmington Valley with aboriginal groups who inhabited the Connecticut Valley.

It should also be stated that from a practical standpoint, the Refuge was an excellent place to conduct an archaeological survey. The size of the Refuge permitted a relatively uninterrupted examination of a large parcel of land. Across the Refuge's extent of 3500 acres, we needed only a single permission to conduct our research. Most important, with the exception of some lumbering operations during the early part of the twentieth century, farming on some portions of the property, and the modifications of wetlands by Senator McLean mentioned previously, the Refuge has been spared wide-scale disturbances or development for more than sixty years.

STRATEGY

With the support and cooperation of Steve Paine and the McLean Game Refuge Board of Trustees, we began the process of data collection in the spring of 1993 by contacting neighbors of the Refuge to determine whether they had ever found archaeological artifacts on their property or if they knew of the previous discovery of artifacts on Refuge land. The results of our mail survey were quite encouraging. We received over 80 replies to our 160 mailings and more than a dozen of the responses provided us with information about prehistoric artifacts found in or near the Refuge (Figure 2). Also in the spring of 1993, we examined historical records for Simsbury and Granby that provided further validation of our belief that the general area of the Refuge had been used by Indians aboriginally. A number of eighteenth- and nineteenth-century references were found regarding artifact finds on or near lands that were to become part of the Refuge in the twentieth century.

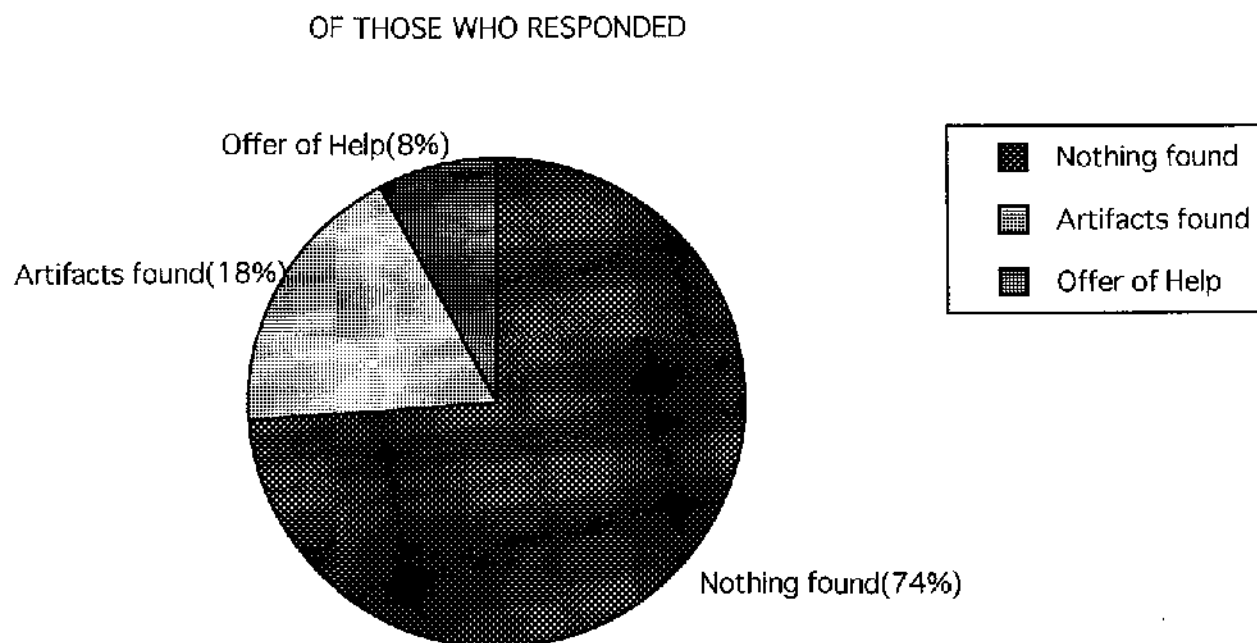


Figure 2. Graph of local informant responses.

With this background research in hand, in July and early August of 1993 the archaeological field school of the Department of Anthropology at Central Connecticut State University, directed by Ken Feder and with Marc Banks as the field crew chief, began its investigation of McLean's with students from Central Connecticut State University and students from Western Connecticut State University led by Laurie Weinstein.

Our strategy for surveying the Refuge was based on findings from earlier surveys carried out in the Farmington Valley (Feder 1981, 1984, 1988, 1990). These earlier surveys include: a stretch of land west of the Farmington River from Avon to Simsbury (1979), Peoples State Forest in Barkhamsted (in 1986), and Nepaug State Forest in New Hartford (1987). In the McLean survey, we established a series of transects along which shovel-dug test pits were placed at 10-meter intervals. All soil excavated from each of our 50 square cm test pits was passed through 1/8 inch mesh hardware cloth.

Although all zones within an area were tested, the McLean survey sample incorporated an element of judgment to a greater degree than the earlier Farmington Valley surveys. Transect placement was

random within the context of a pre-selection of those areas within the Refuge that seemed the most archaeologically sensitive based on the previous work conducted in the Farmington Valley surveys cited above.

Our approach in surveying the Refuge has been intensive, slow, and deliberate. We have kept the distance between test pits short and we have used a fine mesh hardware cloth to examine test pit matrix. Our rationale for this is simple: the long-term goal of the McLean survey is not simply to find archaeological sites that then can be excavated. A "site" commonly is defined as any discrete, bounded location where humans lived, worked, or carried out a task—and where the physical evidence of their behavior can be recovered by an archaeologist. Certainly the "site" is a standard concept in archaeology and often the fundamental analytical unit. Nevertheless, some have called into question the usefulness and even the validity of the site concept, at least as it is used ordinarily. For example, Dunnell (1992) maintains that the archaeological record does not consist of geographically discrete locations where artifacts, ecofacts and features are found. Instead, he views the archaeological record as virtually continuous across the landscape, reflecting the broad and geographically continuous use of that landscape by human groups.

In a similar vein, Ebert (1992) makes the point that focusing on the "site" obscures the actual nature of landscape use by past peoples. Ebert (1992:245-246) argues that the site concept implies that the archaeological record is like a series of discrete snapshots of the past, with each site viewed as a separate photograph in time. Ebert maintains that, contrary to this, the archaeological record is actually more like a single, lengthy, time-exposure photograph, a picture with infinitely overlapping images. Some parts of the image are brighter — these would be distinct locations used more intensively (what we call sites) — but the image is nonetheless nearly continuous and ubiquitous and a focus on those "bright spots" distorts our understanding of a broad land-use pattern.

With this in mind, the goal in the McLean survey was broader than site discovery. Our purpose was and continues to be to illuminate the pattern of prehistoric land-use for this region of southern New England. Depending upon the subsistence base of a given group, its relations with neighbors, local environmental variables, and historical factors, a people use a region in a spatially ordered way, leaving patterned distributions on the landscape. The term for a spatially ordered system of land use is settlement pattern. The archaeological reflection of that settlement pattern is called by Marquardt and Crumley (1987:7) the "landscape signature" of a region, defined as "the material imprints left on the earth's surface by particular constellations of human groups." The landscape signature of a region is reflected by the geographical locations of towns, villages, fishing camps, hunting sites, quarries, transportation features and facilities, shrines, burial grounds, and so on. The landscape signature is, therefore, a material representation of a cultural pattern of the use of land and space.

In attempting to realize the goal of an understanding of a settlement pattern, Marquardt and Crumley (1987) point out that a significant problem results if archaeologists design strategies to search for sites, when "site" is defined narrowly as a place where people lived or buried their dead. As they point out, within the "landscape signature" of an area, along with habitations there are unoccupied or infrequently occupied places that are difficult to discern archaeologically because so few material remains were deposited. As they point out, unoccupied areas of ceremonial significance, mountain passes through which human groups traveled, short term encampments, and even uninhabited buffer zones between different groups of people are all part of a pattern of land use, but may be invisible to archaeologists surveying an area by applying techniques designed to find only discrete, dense accumulations of settlement refuse.

Archaeological investigations that are not site-focused have been called "landscape" or "distributional" archaeology. This approach has become popular in the American Great Basin and southwestern United States as well as in parts of Africa. This is almost certainly the result of environmental factors. In these areas, the pattern of land use was dispersed and continuous because the features of the landscape that attracted humans tended to be more dispersed. With fewer deeply stratified sites and with a higher proportion of surface sites of different ages mixed together across the landscape, it is apparent why such a perspective might be useful. Though archaeologically quite different, in the Northeast a landscape or distributional approach can produce a more representative sample of different aspects of ancient land use.

It can provide a clearer view of an entire settlement pattern rather than focusing only on the discovery of the archaeologically richest locations.

Although in the McLean survey we have continued to use the entrenched concept of the "archaeological site," our focus has been not on the discovery of sites (in the narrow sense of village locations), but on the broader question of how human groups used the landscape in this region of northcentral Connecticut. Survey strategies designed for finding only expansive, densely clustered archaeological remains (i.e., village sites) may guarantee that such clusters are all we will find and that we will miss significant elements in a land use pattern. This must be kept in mind when developing a survey strategy for any given region; we need to look intensively across the entire landscape in order to expose the true nature of a complex pattern of land use by past people (Dewar and McBride 1992). This explains why our approach to surveying the Refuge has been so intensive.

FIELD TESTING

In 1993, we excavated 444 pits along 30 transects in a five-week field season in the eastern one-third or so of the Refuge (Figure 1). We returned to the Refuge in 1995, focusing on the central portion. At that time, we excavated another 138 test pits located again at 10-meter intervals along 16 transects. We excavated fewer test pits than in 1993 for several reasons. Part of the 1995 season was spent outside of the Refuge, testing a soapstone quarry in New Hartford, Connecticut. Also, our crew was smaller and the test pits far more productive, requiring substantially more time to excavate and record them. Approximately 75% of the test pits excavated in 1995 produced prehistoric cultural material, compared to 10% in 1993. Our plan is to return in the field season of 1996 to complete coverage by focusing on the western one-third of the Refuge.

RESULTS: SITES IDENTIFIED

As stated, of the 444 test pits we excavated in the Refuge in 1993, approximately 10% produced prehistoric cultural material. Cultural materials were found loosely clustered in a number of places along our transects. On the basis of the discovery of these remains, we were able to initially identify nine prehistoric archaeological sites in the area surveyed (Figure 1). Two of these sites were located near Kettle Pond, five were near Spring Pond, one was located near an unnamed kettle pond just west of the intersection of Simsbury and Barndoor Hills roads, and one was found just east of the West Branch of Salmon Brook near the north entrance of the Refuge, off Barndoor Hills Road. In 1995 we identified eight more, diffuse clusters of prehistoric material; all were located along the north-south Firetown Road corridor in the western half of the Refuge. All of these sites were also located near Bissell Brook or one of its tributaries. Bissell Brook is a tributary of West Branch which feeds into Salmon Brook which flows into the Farmington River.

Kettle Pond

Historic accounts and one local informant mentioned Indian artifacts having been found in the vicinity of Kettle Pond (Figure 3). Kettle Pond has been called by this name for less than a century. Old records refer to it as "Fiddle Pond," a rather accurate description of its general shape. Its modern name is also an accurate description; the pond appears to be a glacial kettle.

To survey this area of the Refuge thoroughly, we decided to radiate transects out from the glacial kettle. Prehistoric cultural material was found in a number of test pits along these transects. Archaeological materials included hornfels, basalt, quartz, red slate, and chert debitage, a hammerstone, a number of concentrations of charcoal, a small-stemmed quartz projectile point, and a hornfels biface (Figure 4). There



Figure 3. Photograph of Kettle Pond.

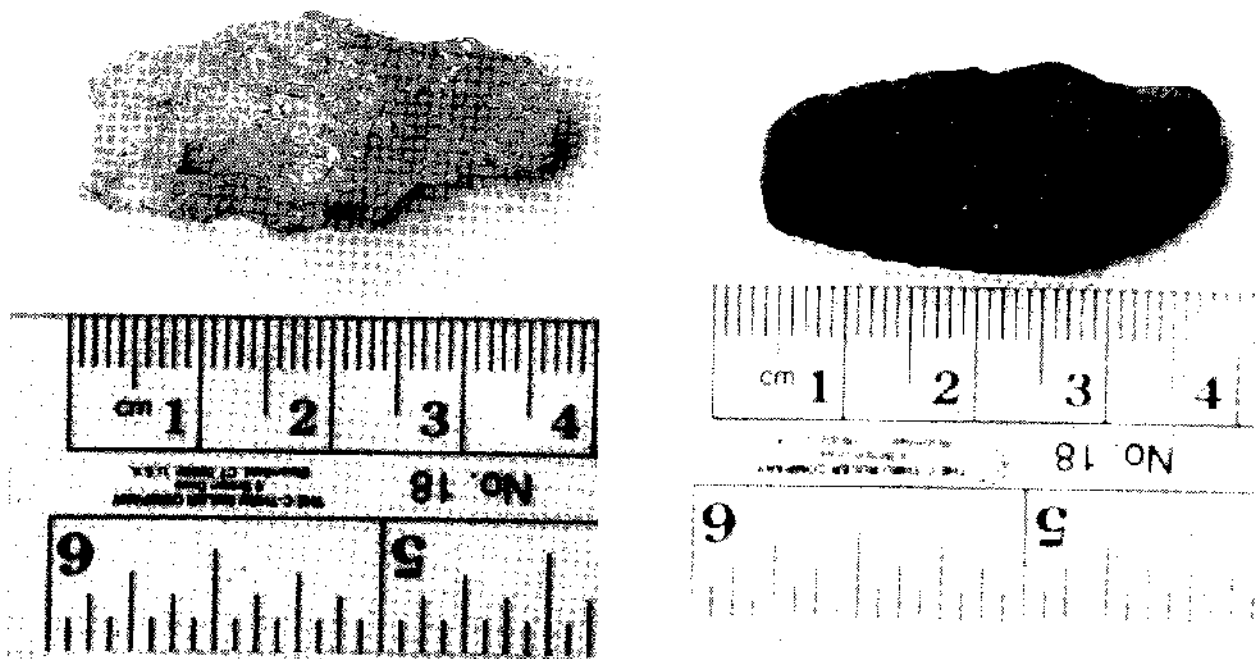


Figure 4. Kettle Pond artifacts.

were no dense accumulations of materials; the prehistoric settlement of the area around Kettle Pond seems to have been neither long-term nor intensive.

Test pits on a transect below the esker and closer to Spring Pond (aboriginally, closer to the wetlands modified by Senator McLean to produce the modern pond) yielded some thick-walled, grit-tempered, plain ceramic sherds, hornfels flakes, charcoal, and fire-cracked rocks. The relationship of these materials to materials from the top of the esker has yet to be established, but it is tempting to connect the two and suggest that the flats around the wetlands were occupied by small family groups while the conveniently close, sharp rise of the esker was used by hunting parties from the small campsites to peruse the opposite side of the esker for the presence of game.

A transect placed along an elevated surface between the western side of Spring Pond and a wetland yielded a number of local lithic materials and a single jasper flake as well as one small-stemmed projectile point. Groups camping here would have had easy access to resources found in the wetlands which would have been on either side of them.

Firetown Road

East of Firetown Road, in the central section of the Refuge, a series of three small sites was located adjacent to the wetlands abutting Bissell Brook. Two of the sites, which consisted of little more than scatters of quartz and quartzite flakes, were located on high peninsulas of dry land jutting into the Bissell Brook wetlands. A third site was situated just north of the wetlands and adjacent to yet another dry glacial kettle (Dry Kettle II). This site produced a flake scatter of exceptionally fine-grained red quartzite, a single chert flake, and a hammerstone with a clearly visible ring of faceting around its oblong circumference.

South of the Bissell Brook wetland, north of Firetown Road and bounded on the east by Bissell Brook and on the south by a tributary of Bissell Brook, we located the most extensive archaeological remains in the Refuge — one of the few easily definable "sites". The Firetown Meadow site produced a thin but continuous scatter of lithic debris across about 100 meters of a north-south test pit transect. Transects both to the east and west of the initial one also produced lithic material — for the most part consisting of chert, hornfels, basalt, quartz, quartzite, and red jasper debitage. Although no diagnostic lithics were recovered in any of the test pits, a concentration of charcoal was located and excavated. We currently are awaiting radiocarbon results on this hearth.

Another transect was located west of Firetown Road, following the complexly braided stream that serves as a tributary to Bissell Brook. Two discrete loci of lithic material including chert, quartzite, and hornfels were located. Small sherds of a thick, grit-tempered ceramic were also found in one of the loci. An additional transect, placed on the east side of Firetown Road, yielded another scatter of lithics.

In the last week of the 1995 season, we surveyed three more transects along a flat terrace bounded to the east by Firetown Road and to the west by a tributary to Bissell Brook. Here we located two denser accumulations of lithics. In one of the spatially discrete clusters (Firetown III), we recovered what has tentatively been identified as a hornfels Steubenville projectile point (Figure 6). In the other cluster (Firetown North) we recovered a hornfels core, hornfels debitage, and the base of a hornfels biface, possibly a knife (Figure 7).

Historical Features

During the survey, a number of historical features were encountered. In addition to the earthworks associated with the ponds, a number of charcoal kilns and remnants of barbed-wire fences were found throughout the Refuge. Other evidence of historical activity were: stone walls (some along the steep slopes of Barndoor Hill), borrow pits where gravel was removed for construction of roads and other modifications throughout the property (a number of historical ceramic sherds, broken glass, metal fragments, and a white ball clay pipe fragment were recovered from this pit and smaller associated pits), an unidentified stone foundation with interior stone walls, a dammed portion of Bissell Brook, a terrace with plow furrows still visible, a small historic dump, a foundation of a tavern at the corner of County and Barndoor Hills roads, the foundation of an out-building associated with the tavern, and remnants of an automobile (Figure 8). A breached stone dam and dry-laid stone foundations are located west of Firetown Road in association with the braided stream that flows into Bissell Brook. Just below the dam is a small, natural drop off that

produced a falls/rapids that likely made the area attractive during spring runs of anadromous fish (Figure 9).

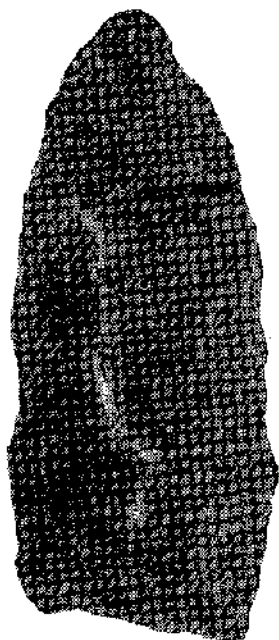


Figure 6. Steubenville point from Firetown III.

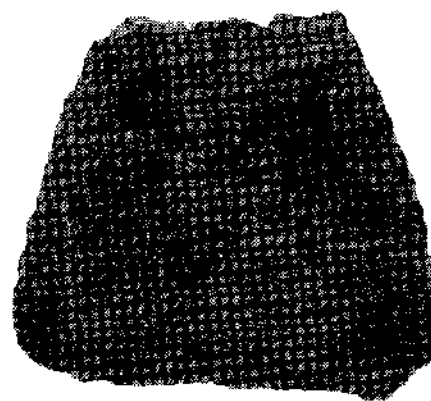


Figure 7. Firetown North biface.



Figure 8. Tavern foundation.



Figure 9. Bissell Brook falls.

PRELIMINARY CONCLUSIONS

Our archaeological investigation of the Refuge has produced some important data about the prehistoric landscape signature of this region and implicitly of the prehistoric Indian use of an interior portion of the Farmington Valley (Table 1). The site materials we found are indicative of small-scale Indian occupations of the Refuge beginning probably a few thousand years ago and continuing up into the not too distant past. With the possible exception of Kettle Pond 1, West Branch, and Firetown Meadow, the sites all seemed to be small hunting and gathering camps. Most of these sites consist of small lithic scatters, some with fire-cracked rock and charcoal concentrations. The majority of the sites are situated in locations that would have been advantageous for hunting. In contrast to sites which have been excavated closer to the Farmington River, these sites are much smaller and possess a limited number of tool types. In particular, the sites around Spring Pond were perfectly situated for hunting purposes: these sites were located on an esker, overlooking Bissell Brook to the east and the wetland to the west that was Spring Pond before it was dammed to create the current pond.

Kettle Pond 1, West Branch, and Firetown Meadow were quite large in comparison to the other sites. Where artifacts were found across areas of only about 100 - 200 square meters for the other sites, artifacts located at West Branch were spread across an area of about 750 square meters. Kettle Pond 1 produced material over an area of about 1,000 square meters and material at Firetown Meadow was scattered across 5,000 square meters. In the case of these sites, however, the density of artifacts was uniformly low, implying a fairly light occupation with a small population staying in place for a relatively short time.

It seems likely that Kettle Pond 1, West Branch, and especially Firetown Meadow represent not single extensive settlements, but a series of reoccupations. Individual occupations likely were no larger nor more extensive than those found elsewhere in the Refuge. In the case of Firetown Meadow, the presence of Bissell Brook and its tributaries, the relatively extensive flats bounded by the brook and its tributaries, and the falls located along one of those tributaries provided ample inducement for persistent

TABLE 1: SITE TABLE

Site Name	Artifacts Recovered
Kettle Pond 1	Debitage (hornfels, quartz, basalt) Charcoal (including one rich concentration: a probable hearth) Base of a hornfels biface Base of a quartz spear point Hammerstone
Kettle Pond 2	Debitage (quartz, chert, jasper, red slate) Quartz spear point base
Spring Pond 1	Debitage (quartz, hornfels) Prehistoric ceramic sherds Charcoal
Spring Pond 2	Debitage (quartz) Charcoal
Spring Pond 3	Debitage (chert, hornfels, basalt, quartz, slate) Charcoal
Spring Pond 4	Debitage (quartz, slate, hornfels, chert) Charcoal
Spring Pond 5	Debitage (basalt)
West Branch	Debitage (slate, hornfels, chert, quartz, basalt) Red slate spear point base Charcoal
Barndoor	Debitage (quartz, basalt)
Dry Kettle II	Flake scatter of fine-grained, red quartzite, one chert flake, faceted hammerstone
Peninsula I	Large quartz flake, scatter of quartz flakes
Peninsula II	Quartz scatter
Firetown Meadow	Extensive, continuous scatter ofdebitage: chert, hornfels, basalt, quartz, quartzite
Northgate Falls I	Scatter of hornfels, quartzite, quartzite biface, small sherds of thick-walled, grit-tempered pottery
Northgate Falls II	Quartz and jasperdebitage
Firetown III	Hornfels, quartz, chertdebitage, Steubenville point
Firetown North	Hornfels, quartz, basaltdebitage, hornfels core, hornfels biface base

reuse of the area, resulting in what today appears as a continuous, thin scatter of archaeological material. Firetown III and North, on the other hand, produced somewhat denser scatters of lithics, implying a little more intensive use of those areas. However, we found no large prehistoric villages in the Refuge with thousands of artifacts as we commonly do along the flood plain of the Farmington River. It can be suggested that the sites we located within the Refuge generally were the smaller, seasonal encampments of people whose larger, more permanent main habitations were located on the flood plain of the Farmington River.

REFERENCES CITED

- Dewar, R.F. and K. A. McBride
1992 Remnant Settlement Patterns. In *Space, Time, and Archaeological Landscapes*, edited by J. Rossignol and L. Wandsnider, pp. 227-255. Plenum Press, New York.
- Dunnell, R.C.
1992 The Notion Site. In *Space, Time, and Archaeological Landscapes*, edited by J. Rossignol and L. Wandsnider, pp. 21-41. Plenum Press, New York.
- Ebert, J.I.
1992 *Distributional Archaeology*. University of New Mexico Press, Albuquerque.
- Feder, Kenneth L.
1981 The Farmington River Archaeological Project: Focus on a Small River Valley. *Man In the Northeast* 22:131-146.
1984 Pots, Plants, and People: The Late Woodland Period in Connecticut. *Bulletin of the Archaeological Society of Connecticut* 47:99-112.
1988 The Beaver Meadow Complex Prehistoric Archaeological District. National Register of Historic Places Nomination Form. Unpublished manuscript on file at the Connecticut Historical Commission, Hartford.
1990 Late Woodland Occupation of the Uplands of Northwestern Connecticut. *Bulletin of the Massachusetts Archaeological Society* 51(2):61-68.
- Marquardt, W. H. and C. L. Crumley
1987 Theoretical Issues in the Analysis of Spatial Patterning. In *Regional Dynamics: Burgundian Landscapes in Historical Perspective*, edited by C. L. Crumley and W. H. Marquardt, pp. 1-18. Academic Press, San Diego.

A BRIDGE THROUGH TIME: NON-CHRONOCENTRIC ARCHAEOLOGY IN AN URBAN SETTING

**CECE SAUNDERS
HISTORICAL PERSPECTIVES, INC
ROBERT C. STEWART
HISTORICAL TECHNOLOGIES**

THE TOMLINSON BRIDGE PROJECT

The Connecticut Department of Transportation (CONNDOT) is preparing for replacement of the Tomlinson Bridge in New Haven. The case history presented here concentrates on the third and extant bridge by that name in the same location. The first bridge crossing at this site was in 1797. The present bridge carries U.S. Route 1 over the Quinnipiac River, and connects the cities of New Haven and East Haven (Figure 1).

The bridge crossing area has been the site of human activity throughout prehistoric and historic times. New Haven was a prominent seaport in the colonial period and has been an active harbor throughout most of Connecticut's history. At the eastern touchdown of the bridge is an architecturally distinctive Yale University boathouse which has been adapted for commercial use. Because of the potential significance of the bridge itself and the land and buildings associated with the bridge landing, CONNDOT was required to conduct a Phase 1A cultural resources study of the bridge area and eventually file a Historic American Engineering Record survey on the bridge structure and a Historic American Buildings Survey on the associated boathouse.

THE CONTEXTUAL APPROACH

Any particular highway corridor, block, or lot undergoing archaeological or broader cultural resource evaluation must be approached as a component in a larger hierarchy or pattern which reflects and is dependent upon changes within the city as a whole (Cressey *et al.* 1982:44). The Tomlinson Bridge has served, through its 197 years and various manifestations, as a vital link across an active waterway. To appreciate the scope of its import as a transportation link, visual landmark, and engineering feature, the Bridge had to be placed within the context of the community and its evolution.

Historic contexts provide a framework for the identification, evaluation, designation, and treatment of cultural resources associated with particular themes, areas, and time periods. Historic context-based planning permits recognition of individual properties within their proper levels of significance (Grumet 1990:18).

A city such as New Haven is a complex, ever-evolving "organism" with cultural components (socio-economic, political, technological, ideological, etc.) and physical components (physiographic, hydrologic, climatic, geologic, etc.) which are interrelated in a dynamic system. A city is not a closed system, but one that is affected by, and in turn affects, larger regional, national, and international systems (Dickens *et al.* 1982:107). Changes in one component of the system are likely to produce changes in other components. For example, the existence of a trolley line and need for carrying railroad freight service imposed construction restraints on the design of the third Tomlinson Bridge.

HISTORICAL CONTEXT: NEW HAVEN HARBOR AND THE QUINNIPIAC RIVER

From the time of the founding of the New Haven settlement in 1638 until around 1650, early commercial shipping ventures were numerous but not very successful. Shipping dropped off in the harbor and was essentially nonexistent for almost 100 years. Then in 1750 commercial relations were established with the West Indies and New Haven's maritime commerce began to flourish. Between 1750 and 1775 ships were sent to England, France and Ireland and ties were strengthened between the port and the West Indies (U.S. War Dept. 1939). The first of the Tomlinson Bridges was built during the harbor's thriving trade with the West Indies. It was built under a charter granted to Isaac Tomlinson and his business associates in 1796.

By 1815 there were 100 vessels sailing out of New Haven Harbor actively engaged in overseas commerce and regular steamboat service with New York City was established. The steamboat docked at Tomlinson Bridge (Atwater 1887:356).

Many steamboat companies were formed to run the route between New Haven and New York. The steamboat business was chaotic and tempestuous. The head of the Connecticut River Steamboat Company, "Commodore" Cornelius Vanderbilt, had his ships ramming vessels belonging to competing lines. He succeeded in sinking at least one competitor's ship outside the harbor. The commercial contacts with the West Indies brought wealthy families from there to New York and then by steamboat to New Haven. The city became a popular vacation spot, and hotels, wharves and "pleasure grounds" were built along the waterfront south of Tomlinson Bridge to accommodate the passengers (Atwater 1887:302).

The wharf built off the channel causeway of the Tomlinson Bridge in 1817 became the new location for the Fulton and United States Company's steamboats. It was the first and remained the only wharf connected to the Tomlinson Bridge until about 1840 when the Belle Dock was built on the south side of the bridge off the west causeway. Continuous use cycles and the value of waterfront real estate were strong incentives to expand the shoreline property along the important ferry and steamboat landing. The following section briefly outlines the landfill history.

A good deal of harbor activity was generated by the oyster trade. The waters bordering both the east and west banks of the Quinnipiac River accommodated prolific oyster beds. Most of the ships leaving New Haven Harbor for trade with foreign ports carried bushels of this abundant resource.

At the close of the nineteenth century the Quinnipiac River was the site of a race course for Yale University rowing crews. George Ade, a prominent alumnus, contributed funds to build a boathouse on the east bank of the river immediately north of the Tomlinson Bridge approach. Built in the "English Style," the seven-bay brick structure hosts a slate roof and elaborate stepped-end gables with finials. The main entrance, which fronts on Forbes Avenue as it approaches the bridge span, is dominated by the arched second floor window. The doorway and gables are enclosed with terra cotta coping. A Yale University seal, embellished by mythical sea creatures on either side, is located over the door. When built, it was completely surrounded by tidal water and connected to Forbes Avenue by an arched ashlar bridge that served for many years as the only pedestrian entry. The pedestrian bridge is finished with decorative elements that reflect boathouse features. The Ade Boathouse (Figure 2) is an architecturally significant building in the area and may have influenced the design for the third Tomlinson Bridge. However, increasing river traffic made the site untenable for rowing activities and boating activities were moved away from the site by 1924.

GENESIS AND HISTORY OF THE TOMLINSON BRIDGES

Toward the end of the eighteenth century, a Mr. Tomlinson and his business associates operated a ferry that ran the crossing between New Haven and East Haven. A new bridge that had been built further up the Quinnipiac River siphoned off much of their traffic. To counter the competition, Tomlinson and his associates built a 27 foot wide wooden toll bridge off the east end of Water Street. This was a covered

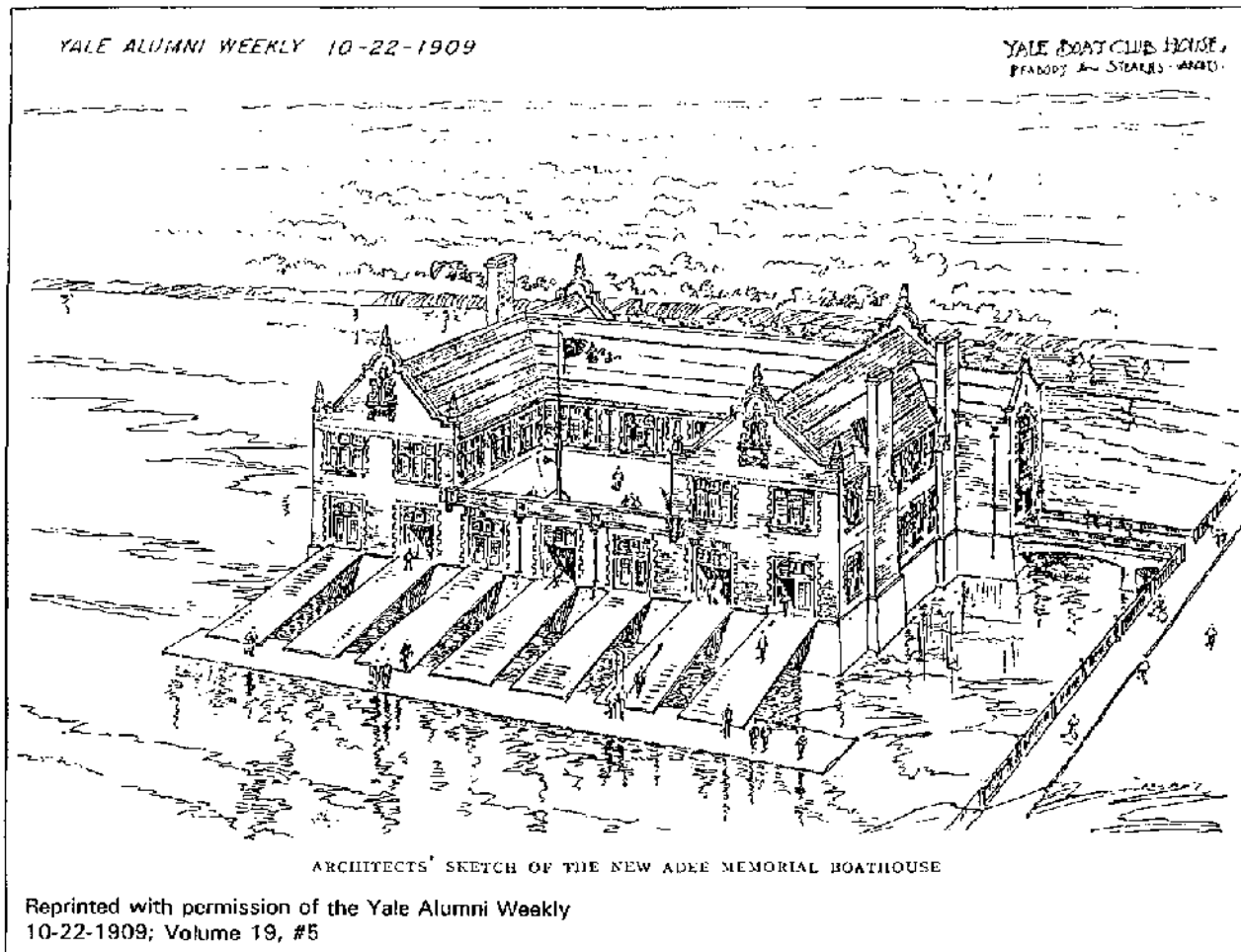


Figure 2. The Adee Boathouse. View from the northwest. Note the arched ashlar pedestrian bridge connecting the boathouse with Forbes Avenue and the Tomlinson Bridge east side approach.

wooden truss with a draw section that allowed vessels passage to the settlement of Fair Haven. An advertisement in 1798 heralded the new bridge:

The subscriber is happy to inform the public that a bridge from New Haven to East Haven is passable for foot passengers. A box will be placed at Mr. Woodman's store and the toll will be left to the generosity of those gentlemen that walk over the bridge (New Haven Colony Historical Society [NHCHS]/Dana, Vol. 56).

The bridge was partly destroyed and reconstructed in 1807. Several later drawings, paintings and photographs show the Tomlinson Bridge as a covered bridge (NHCHS/Dana Vols. 52,56; NHCHS 1976: 51). There is no record of the entire structure being replaced, but the covered segment was built in 1842 (NHCHS/Dana Vol. 52).

The oyster harvest in the early nineteenth century was a major contributor to the local economy. The commercial activity necessitated maintenance and enlargement of the link across the Quinnipiac. The value of the location of the bridge and its adjacent docks had been recognized early on by the railroads. By the mid-1800s the Hartford & New Haven Railroad Company owned the majority of the Tomlinson Bridge

Company stock (Atwater 1887:354). The 1851 Hartley & Whiteford Map shows railroad tracks coming into New Haven from the north, down along East Street and out to the tip of the Belle Dock. A typed notation on the map points to a small structure at the end of the dock "New Haven's first railroad station, the Hartford & New Haven, opened in 1839."

In 1885 the Connecticut General Assembly ordered the bridge company to replace the "venerable one that had so long remained there" (NHCHS/Dana Vol. 56), and by December 1, 1885 the wooden bridge had been demolished and an iron bridge put in its place. This bridge, which remained in service from 1885 to 1922, had a swing section and a fixed section which was a double intersection Pratt truss. This particular iron bridge proved to be less than satisfactory. It had been a railroad bridge in service across the Housatonic River in 1883 and had been retrieved from a Stratford, Connecticut scrapyard. Its construction was considered obsolete even then (NHCHS/Dana Vol. 56, New Haven Register 1887). The harbor traffic, vehicular and pedestrian, continued to expand and the roadway and sidewalks were unable to carry the peak traffic. The Tomlinson Bridge Company continued collecting tolls until New Haven voted for funds to take control of and modernize the bridge. The city assumed ownership in 1887. By 1893 trolley lines had been laid across the bridge.

Major new load requirements came in the early twentieth century when the Manufacturers Street Railway Company secured the right to use the bridge. They ran full-scale, fully loaded railroad freight cars over the bridge (State of Connecticut 1990:#337:2). By 1913 the Tomlinson was opened more than 17,000 times a year.

New Haven launched plans to replace the second Tomlinson Bridge in 1913. New Haven engineer Ernest W. Wiggin was hired to draw plans for a new bridge but the project was put on hold until after World War I. Construction of the extant double-leaf bascule span took place from 1921 to 1924 (Sanborn 1923-1930).

Design requirements for the third Tomlinson Bridge were especially rigorous. The new bridge had to serve vehicular, public transport, rail freight and navigation needs. The project produced a composite bridge design to span the 1000 foot wide Quinnipiac River. The crossing consists of a 390 foot fill section which encroaches into the tidal area. In addition, there are three fixed symmetrical approach spans (Regional Planning Agency of South Central Connecticut, New Haven Connecticut [RPASCC] 1984:9-10). The bridge is classified as a trunioned, double leaf, underneath counterweight, closed pit bascule bridge (Hool and Kinne 1923:25).

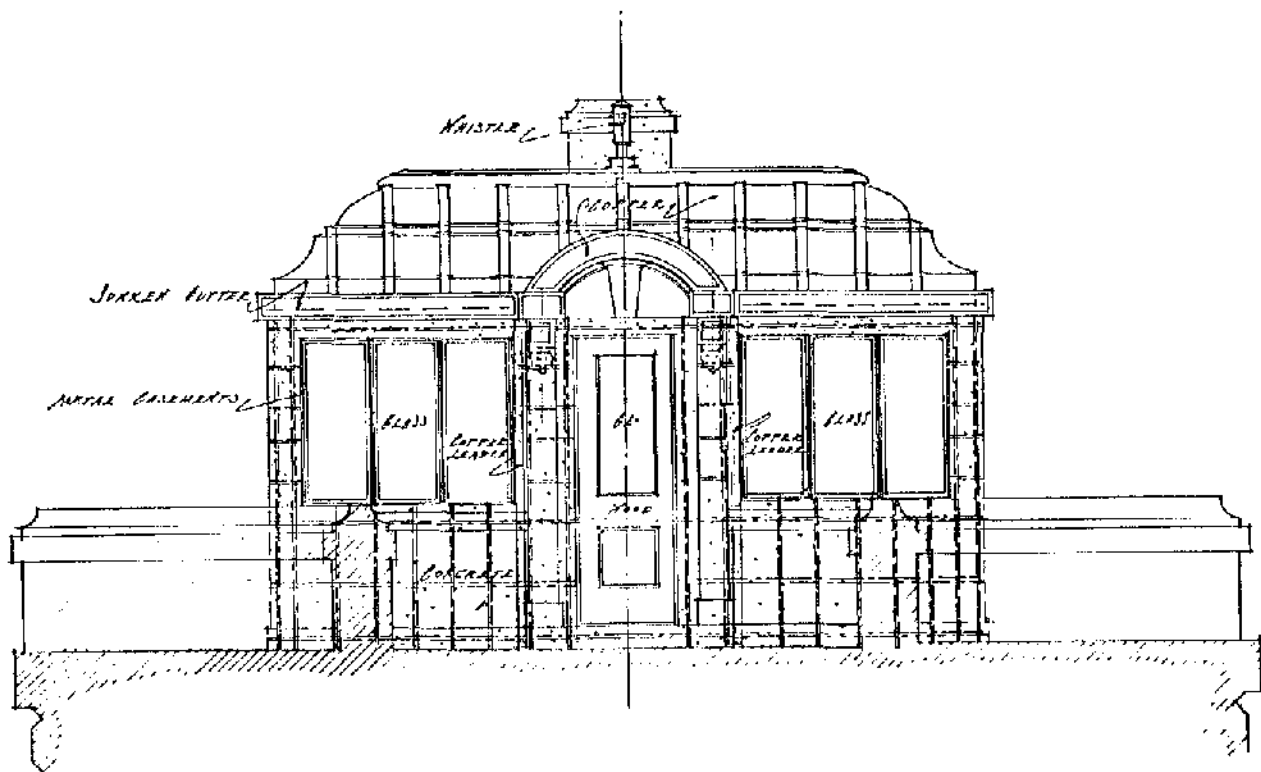
The third and extant Tomlinson Bridge is trimmed in the Beaux-Arts' architectural style. The original operator's house featured a hip roof with a cyma profile and a segmental arch over the door (Figure 3). The house was form-molded in reinforced concrete permeated with one-half inch aggregate. After the forms were removed, the aggregate was exposed by rubbing the surface with Corundum (Wiggin 1916:35). While the original operator's house has been destroyed, a matching structure located on the eastern bascule pier still exists.

ANALYSIS OF DISTURBANCE-ARCHAEOLOGICAL VISIBILITY

Various land filling episodes which took place over time radically changed the coastline. Maps dating from 1775 through 1824 were examined to determine original coastline at the bridge touchdown location.

The Buckingham 1830 map shows the beginning of the extensive filling that took place off the end of Bridge Street. A small group of buildings had been constructed at the very end of Bridge Street where it meets the entrance to the Tomlinson causeway.

By 1851 the Belle Dock was in place on the south side of the bridge. It is labeled "Steam Boat Landing" at this time and has three railroad track extensions on it, along with the railroad depot. The original shoreline just above Bridge Street has been regulated and extended into a wedge shaped wharf



• ELEVATION TOWARDS THE WATER •

Figure 3. A cyma roofed operator's house.

or landing. A group of nine structures is present on either side of the railroad track at Bridge Street. They are unlabeled and may be part of a nearby foundry or part of the railroad operations.

The 1868 Beers Atlas shows little change on the west side of the harbor. The Belle Dock is still labeled "Railroad Steam Boat Dock." This is one of the first maps to show the eastern side of the harbor, and there are 18 structures lining the road that comes off the bridge.

The 1876 USGS map has landfill on both the north and south sides of the western end of the bridge, and three structures are present on its north side, opposite the eastern end of the Belle Dock. The railroad depot has either been torn down or been incorporated into a larger structure that covers the end of the dock. More railroad tracks have extended over additional fill above Bridge Street.

By 1884 the original shoreline north of Tomlinson Bridge was completely covered and extended. A roundhouse for the railroad cars was present off the north end of Bridge Street. The filling continued in the same pattern through 1893 and 1900. The Kelly map of 1911 shows the Yale Boathouse, offshore on the East Haven side. Also on that side of the channel we can observe the first definite signs of artificial filling taking place around the end of the bridge.

In 1929 there was no visible change on the western side of the channel, but on the eastern side filling changed the shoreline south of Tomlinson Bridge in East Haven. From 1934 to 1936 the maps show the completion of filling episodes on the East Haven side south of the bridge, bringing the land out and even with the Yale Boathouse. The north and west facades of the boathouse still face the river. Twentieth-century aerial photographs, some taken during construction of highway I-95 that runs roughly parallel to the Tomlinson Bridge, also indicated shoreline landfill sequences.

Cartographic evidence of the fill episode history was confirmed by examining soil boring test results. Boring logs of continuous tube samples can provide a complete look at a site's subsurface stratigraphy and help to identify the degree of fill overlying original shoreline soils.

ENGINEERING

The Tomlinson Bridge project offered an opportunity to perform some 'reverse engineering' and to speculate on why a particular design was chosen. We were unable to find any documentation explaining the engineers' rationale in reconciling the requirements of the project within the budgeted cost. We looked at the bridge as designed and related structural features back to historical realities and the topographic configuration at the time of its design. Essentially, we performed the engineering function opposite to the direction it normally takes. The site posed a unique set of engineering and aesthetic problems; design of the bridge exemplifies form following function. The proximity of an architecturally distinctive building, the Yale (Adee) Boathouse, may also have provided a compelling argument for designing a harmonious, low profile, aesthetically pleasing structure.

ANALYSIS OF DESIGN

Even though the bridge dates to the recent past, no letters or documents relating to the selection of a bascule type with an underneath counterweight were found. Why did New Haven's engineer, Ernest Wiggin, select this particular design? Going through an analysis of the bridge, its location and required functions yields a plausible answer to this question.

The specifications for the Tomlinson Bridge called for a freight railroad electric power transmission system that could also supply passenger trolley cars. This power transmission system restricted locomotive size. Fifty ton, pre-World War II electric engines which obtained power from overhead trolley lines were limited to towing three to four 170,000 pound cars (car plus load) up a grade generally not exceeding 2.3 percent. These engines would lose traction on steeper grades or with any greater loads. Heavier engines having sufficient traction were available but they could not have been powered from the trolley lines.

Engines crossing the bridge had to overcome grade, load and inertia. They also started without the benefit of perceptible momentum (RPASCC 1984:14-18). These circumstances supported selection of a bridge design which would minimize the approach grades to less than 2.5 per cent (Hardesty & Hanover 1990:9).

The engineer who designed the working parts of the bridge was known for elegant and clever solutions to mechanical problems. Joseph Baermann Strauss, was born on January 7, 1870. His career began in 1892 subsequent to receiving his degree in civil engineering from the University of Cincinnati. Strauss' most distinguished achievement was the Golden Gate Bridge across the mouth of San Francisco Bay, generally conceded to be one of the world's most beautiful bridges. The first ten years of his career were spent becoming thoroughly familiar with practical aspects of bridge design. The Sanitary District of Chicago employed Strauss to revise and redesign the early types of bascule bridges then being installed. In 1904 he developed the principle of the trunion bascule bridge, patented several design improvements, and founded the Strauss Bascule Bridge Company.

Three main types of opening bridge were commonly employed in the post-World War I period. They were the swing, bascule and vertical lift bridge. Swing bridges were out of favor because they created a navigational hazard in mid-channel. In a narrow channel they took up too much room. The vertical lift bridges of the period frequently jammed and were expensive to maintain. Bascule bridges were expensive and also had operational problems. A bascule bridge is a form of draw bridge in which the moveable span pivots on trunion bearings and is counterbalanced by a weight. Its action is akin to that of a see-saw.

The word bascule is derived from an amusement device used at medieval fairs. A "victim" was poised on the raised end of a see-saw like machine. When a restraining pin was pulled the unfortunate individual plummeted to the ground accompanied by the raucous laughter of the crowd. The derivation of the word was from the French "bas" to lower and "culer" a common word for derriere.

In 1902 Joseph B. Strauss began developing a series of designs for bascule bridges. Bascule bridges were rare and strictly limited in length at the turn of the century. They were also expensive, primarily because costly cast-iron counterweights were used to counter-balance the bridge deck. Early operating mechanisms were also complicated, unreliable and difficult to maintain.

To lower overall bridge cost, Strauss substituted dense concrete filled with slag or iron punchings for the conventional iron counterweights. While concrete/iron counterweights greatly reduced cost, use of this material resulted in an expansion of the counterweight's volume.

On larger bridges, the bulky concrete counterweights interfered with the supporting structures of bascule designs. Strauss solved this problem by developing a parallel link counterweight system. In a parallel link scheme the counterweight, its trunion, the main leaf trunion and their connecting struts, form a parallelogram. By using this design, which is disclosed in Strauss' patent #738,954, the counterweight is kept in the same relative position during opening and closing of the bridge. The design provides an additional increment of efficiency during movement by maintaining the bascule leaf in a condition of constant balance during operation of the bridge (Figure 4).

The records of the patent office offer a resource for determining the engineering significance of machinery, structures and processes. They can readily give an insight into the "state of the art" or the leading edge of technology and engineering at the time of their initial disclosure.

Later, Strauss adapted the parallelogram linkage to an "Underneath Counterweight" design. Strauss also shaped the concrete counterweight to fit between structural elements. The Strauss design utilized open spaces under the bridge deck and between the girders to accommodate the upper portion of the counterweight when the bridge was closed. This feature constituted a principal claim of Strauss' patent number 1,124,356. Strauss provided moveable bridge designs which were more or less standardized and could be largely prefabricated in a steel mill. This lowered the cost of design and construction significantly. It may have also encouraged patent infringement on concepts developed by Strauss.

Those responsible for the selection of Joseph Strauss as the designer may have been influenced by the results of a lawsuit brought by the Strauss Bascule Bridge Company against the City of Chicago. Strauss was known as a litigator who frequently went to court to protect his patents and designs. Strauss obtained Patent 995,813 on June 20, 1911. It claimed several design improvements, some of which the City of Chicago had incorporated into bridge designs without obtaining rights from the Strauss Company. Strauss sued, and on October 7, 1919, his patent was conclusively upheld (*Baker et al.* 1919:261 F. 358). The lawsuit had two effects. The judges held Strauss' concept to be "novel, not anticipated and valid" thereby contributing credibility to his ideas and standing as an innovator. The decision enhanced his reputation as an engineer. It also gave notice that Strauss would litigate to protect his inventions and designs. In view of the lawsuit, it is significant to note that the Tomlinson Bridge blueprints document that Mr. Wiggin, consulting engineer on the Tomlinson bridge project, prudently "obtained a license from the Strauss Company" before proceeding with the job.

By utilizing previously unused space between the deck support structure to house the upper portion of the counterweight, Strauss' design could be built about two feet lower or closer to the water than competing types. This allowed the approach to be built at a grade of less than 2.5 per cent. Consequently, given the grade constraints and the required compatibility of freight locomotive and passenger trolley power reception, the selection of the patented Strauss underneath counterweight design was ordained by the operating environment.

The Strauss layout also concealed the counterweight and operating mechanism under the roadway, thus producing a graceful, low profile bridge that was amenable to a variety of architectural treatments. A Strauss underneath counterweight bascule design would be unobtrusive and have a minimal visual impact on the surrounding landscape (Figure 5).

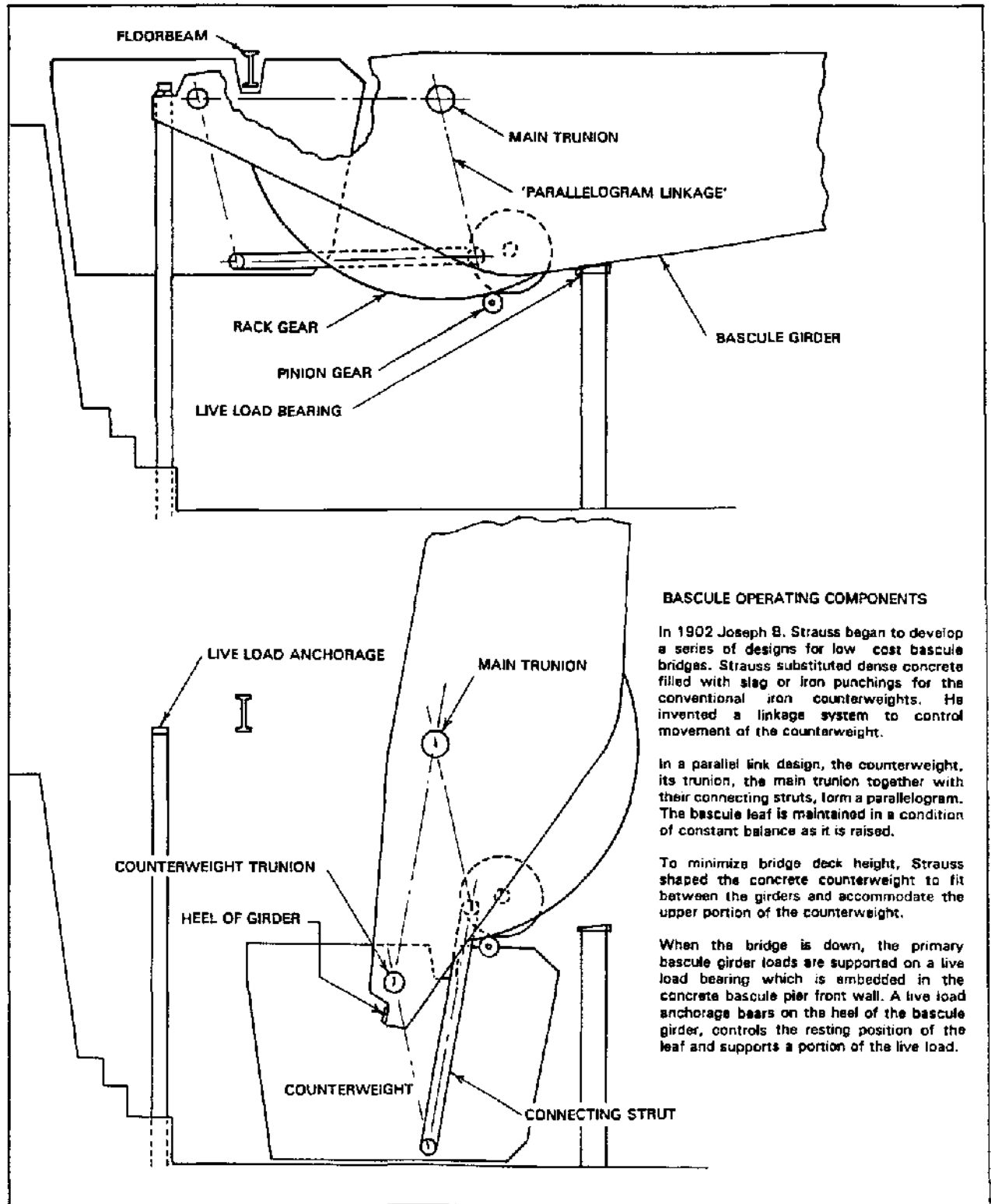


Figure 4. Illustration of Strauss' patents.

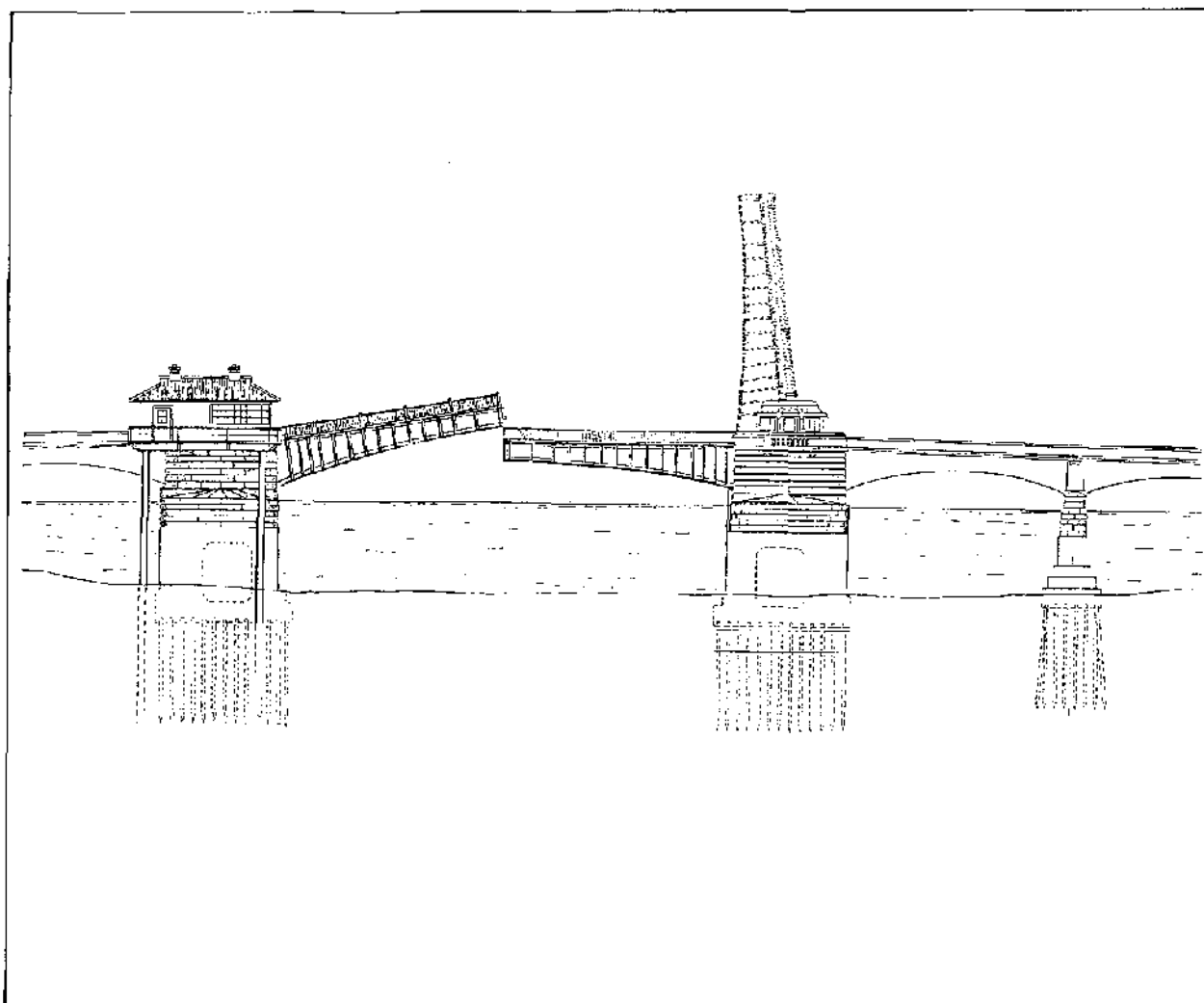


Figure 5. The Tomlinson Bridge. This is the Tomlinson Bridge elevation viewed from the south. The Operator's house on the left dates to 1977 and replaced the original Cyma roofed house. The structure on the right is a comfort station and storehouse. It reproduces the appearance of the original operator's house. (Illustration by Robert Stewart.)

There may have been some consideration given to making the bridge aesthetically pleasing and in harmony with the nearby Adey (Yale) Boathouse. The low slope approaches and profile would allow continued access to the boathouse from Forbes Avenue over its connecting footbridge.

DISCUSSION

This paper has discussed the mechanics of and resources involved in documenting a particular urban site. Aside from the requirements of various federal, state, and municipal laws, the 'why' of recordation has not been discussed. Certainly it is in part to mitigate a sense of loss -- loss that comes of seeing the early work of a master bridge builder replaced. In another instance the loss might be a magnificent piece

of nineteenth-century industrial architecture which falls to the wrecking ball. The loss might be more cultural in nature; an ethnic neighborhood, replete with old world sights, sounds and smells, where immigrant labor endured low wages and hazardous working conditions on the path to economic attainment. Or the loss might be a fine piece of machinery, precisely made and bursting with innovation, consigned to the scrap pile. The damage might be losing the contributions of early industrial practices or technology that bridged the gap between the machine age and the computer age. Much of this can be mitigated by careful site recordation, cultural-based historical documentation and preservation with interpretation in a museum. Historical archaeologists, conducting research mandated by historic preservation or environmental regulations, have to be aware of the implications of their work which extend far beyond the ordinary recordation of the physical features of a site.

Another aspect not ordinarily addressed by archaeologists is the value of the technical information contained in a nineteenth-century urban site to contemporary engineers. Many of the mechanical innovations developed during the nineteenth century are still practical methodologies which were limited by the materials available. Within the framework of modern material science, these can be recycled. Sometimes ideas and methodologies which looked safe and sensible did not stand the test of time. Often knowing what does not work can be as valuable in the field of engineering as having insight into the definitive design or methodology.

CONCLUSION

The study of historical archaeology in an urban setting is the broad-based study of municipal infrastructure, industrial properties, transportation facilities, bridges, and the total range of features found in a metropolitan environment through time. Cultural aspects may include studies of immigration, settlement patterns, labor and economic records, gender and racial inquiries, and oral histories. Investigation generally relies on material remains and documentary data. In the practice of the discipline, the physical remnants of mills, mines, machinery, factories, warehouses and public works are utilized to expand upon the written record and clarify details that are difficult to explain in words or illustrations (Figure 6).

Connecticut, as a major early industrial center, has many sites where historically significant manufacturing activity occurred. The area produced tinware, clocks, firearms, sewing machines, bicycles, machine tools, cutlery, brass products, hardware and a whole range of merchandise that fueled consumer demand, industrial growth and prosperity. The state's entrepreneurs were trailblazers in the iron and chemical industries. This commercial activity required support from a road and rail network; consequently, locations associated with railroads or maritime activities are also plentiful. The area experienced several waves of immigrant labor that worked in the factories and built the railroads. Labor has a long history of struggle and success in the region. The early industrial activity effaced some evidence of earlier indigenous habitation and permanently changed the landscape. The regional industrial revolution displaced earlier agrarian enterprises, created new sources of wealth, stimulated immigration and resulted in vast social change.

The physical remains of this revolution are abundant in the urban setting. Remnants of primitive iron-works, textile mills, brass foundries, early power stations, glass works and a whole range of manufacturing operations dot the countryside. The infrastructure that supported these enterprises is also evident. Abandoned railroad rights-of-way, antiquated bridges, deserted wharves, millrace fragments and unused canals exist and serve to illuminate what was a vigorous focal point for America's Industrial Revolution. These are the material remains of what created much wealth, capital, and a host of later environmental and social problems.

Unfortunately, the nineteenth-century millwrights, factory hands, inventors and engineers who were behind the innovations that revolutionized manufacturing and transport were not predisposed to document their achievements in written form. Nevertheless, the records of their accomplishments and failures exist in the features, artifacts, patents, advertisements, scrap yards, and refuse piles of the nineteenth century.

Each urban site, whether vacant land or an extant industrial complex, offers different avenues of research. The following checklist offers possible sources for the data essential in developing contextual histories and establishing significance evaluations.

Archival photographs	Nomination/Inventory forms: local/state historic buildings surveys
Aerial photographs (National Archives - USGS)	Newspaper morgues
Archaeological reports: Special Collections, UCONN Library	Oral histories/private collections of long-term residents or retirees
Biographies, obituaries (The National Cyclopaedia)	Paintings, prints, lithographs, wood engravings
Census records, business directories (e.g., Trow's, Goulding's)	Patents
Church records	Private corporate archives, memorabilia, murals, office decor
Coastal charts (historic)	Probate records
Contemporary (period) engineering textbooks and manuals	Railroad and utility companies records
Contemporary newspapers, technical journals	Sanborn Mapping and Geographic Information, Pelham, New York
Dissertation data base (available on CompuServe)	Soil boring test logs
E-Mail - Internet	Specialized library collections
Engineering plans, shop drawings	State Department of Transportation records
Legal proceedings and decisions, case records	"Fabioids in Time" (The Police Gazette)
General/Professional/historical magazine data bases	Topographic quads (historic), city and county atlases
HABS/HAER collection in the Library of Congress	Town and city annual reports
Model builders, recreated machinery, model railroads	Town, state and city archives
Municipal Services - Public works records	Vanity press, personal diaries
Museum (local) and historical society (local and state) collections	Various computerized data bases-historic public works
National Register of Historic Places designation reports	

Figure 6. Research resources for Historical and Industrial Archaeology.

Close examination of these material remains can fill in the sparse written record and illuminate the history of the period.

The example we used, that of a consequential but relatively simple bridge, has implications beyond its history or engineering significance. Many of the Connecticut urban sites such as the Tomlinson Bridge in New Haven Harbor are slated for redevelopment. They represent an untapped source of nineteenth-century history which can be of invaluable use to engineers and historians of technology.

REFERENCES CITED

- Atwater, Edward E. (editor)
 1887 *History of the City of New Haven*. W. W. Munsell & Co., New York.
- Baker, Alschuler and Evans
 1919 City of Chicago vs. Strauss Bascul Bridge Co. Circuit Court of Appeals, Seventh Circuit. No. 2677 (Cite as: 261 F. 358).
- Cressey, Pamela J. and John F. Stephens
 1982 The City-Site Approach to Urban Archaeology. In *Archaeology of Urban America, the Search for Pattern and Process*, edited by R.S. Dickens Jr., pp. 41-59. Studies in Historical Archaeology. Academic Press, New York.
- Dickens, Roy S., Jr. and Timothy J. Crimmins
 1982 Environmental-Impact Archaeology in the Urban Setting: A View from Atlanta. In *Archaeology of Urban America, the Search for Pattern and Process*, edited by R.S. Dickens Jr., pp. 105-113. Studies in Historical Archaeology. Academic Press, New York.
- Grumet, Robert S.
 1990 *Historic Contact: Indians and Colonists in Northeastern North America, 1497-1783*. National Landmark Theme Study, U.S. Department of the Interior, National Park Service, Washington, D.C.
- Hardesty & Hanover
 1990 *Report on the Inspection, Analysis, and Reconstruction of the Tomlinson Bridge over the Quinnipiac River, New Haven - East Haven, Connecticut*. Hardesty & Hanover, Consulting Engineers.
- Hartley & Whiteford
 1851 *Map of the City of New Haven and Vicinity*. Collins & Clark, Philadelphia.
- Hool, S.B. and Kinne, W.S.
 1923 *Moveable and Long Span Bridges*. McGraw-Hill Book Company, Inc., New York.
- New Haven Colony Historical Society (NHCHS)
 1976 *A Graphic View of New Haven*. The New Haven Colony Historical Society, New Haven.
 n.d. Dana Collection. Scrapbook collection donated to the Historical Society containing original sources on New Haven history. On microfilm. Vols. 4-7, 47, 19, 26, 52, 56, 123.
- Regional Planning Agency of South Central Connecticut
 1984 *Rail and the Harbor-Freight Service to New Haven Harbor*. New Haven, Connecticut.
- Sanborn Map Company
 1930 *Insurance Maps of New Haven, Connecticut*. Volume 1 and Volume 3, Update of 1923. Sanborn Map Company, New York.
- State of Connecticut - Department of Transportation
 1990 Historic Bridge Inventory Form #337.
- United States War Department (U.S. War Dept.)
 1939 *New Haven Harbor, Connecticut*. U.S. Engineer Office, Providence.

Wiggin, Ernest A.

1916 *Plans: Tomlinson Bridge over Quinnipiac River.* Ernest A. Wiggin, Consulting Engineer.
Total of thirty-six sheets-Original plans for Tomlinson Bridge.

POST-CONTACT POPULATIONS ON THE NEHANTIC RESERVATION OF LYME, CONNECTICUT

**JOHN PFEIFFER
ARCHAEOLOGICAL SOCIETY OF SOUTHEASTERN CONNECTICUT**

PREFACE

The beginning of this study can rightfully be traced back to the early 1970s when I was a student of and assistant to Dr. Douglas F. Jordan. Working in his semi-subterranean office produced an incomplete knowledge of the hour of the day or for that matter the current weather conditions. I often wandered out to find it both dark and snowy.

Other operations that I undertook on Dr. Jordan's behalf included painstaking library reviews of archaeology topics. I was instructed to undertake these projects meticulously and keep all data on 3x5 index cards. Dr. Jordan exposed me to a plethora of information and taught me a great deal.

I never viewed this as a job and always considered my assistantship with Dr. Jordan a wonderful opportunity to view new and exciting things. I will always admire his amazing recall of information and the habit of keeping 3X5 cards in his shirt pocket for immediate note taking. Most of all, his academically directed encouragement interspersed with humor were most valuable to my development as an archaeologist.

Unfortunately, while I owe some of my academic strength to Dr. Jordan, I also pass on to my students some of the poorest anecdotes, jokes, and puns in Northeastern archaeology. I ask to be absolved and clearly state in my defense that Dr. Jordan was most to blame.

During the time that I was assistant to Dr. Jordan, I worked extensively with the Norris L. Bull collection, which is part of the Anthropological Collections at the University of Connecticut. I undertook both cataloging and numbering of this very large assemblage of artifacts and came to know the collection by heart. A particularly interesting pair of colonial glass wine bottles were part of the collection and catalogued as coming from Crescent Beach, Niantic. Some 15 years later I saw an identical artifact being used as a doorstop at a Crescent Beach cottage that was in the midst of major renovations. I called Dr. Jordan to come and visit what was to become the salvage excavation of a small part of the Nehantic Burial Ground (Pfeiffer and Malcarne 1989).

PURPOSE

This paper is primarily the product of archival research augmented by limited archaeological field work in the confines of the Nehantic Reservation. It deals with the changing nature of the reservation's population. The study is a synthesis of historical research concerning the Lyme, Old Lyme, East Lyme and Salem areas of southeastern Connecticut. This research sought to establish the history of 1) the Black Point and Crescent Beach area of East Lyme; and 2) the Gungy region of northeastern Lyme.

In the course of performing these archival searches it became clear that significant cultural changes had been occurring on and adjacent to the Reservation. Such changes were the result of the complex interaction of various cultural groups. These cultural and demographic changes are significant factors that have fostered the continual evolution of southern New England Native American culture.

To the anthropologist such changes are both natural and clearly predictable. From this perspective, culture is viewed as a living and an ever adapting system. Yet, some individuals have inappropriately suggested that "they don't look like Indians" (statement of Donald Trump made during a WFSB television

interview, 1993). This kind of statement is based upon static and stereotypical perspectives of culture. Such a view lacks an understanding of historical reality or the appreciation that culture and society are in continuous change and ever evolving.

This paper investigates the cultural and historical processes that surrounded the Nehantic Reservation of Lyme, Connecticut as a representative case study. Of primary concern are the cultural and historical factors responsible for demographic variation. For the physical anthropologist, this needs to be properly considered in order to understand and interpret information relating to both past and present populations. On a broader basis, the public needs to comprehend the complexity of contemporary Native as well as African American culture and divest itself of various misconceptions and prejudices.

TERRITORY

The Nehantic were a group of Native Americans that resided in southern and southeastern Connecticut when the first contacts were made by Europeans during the sixteenth and seventeenth centuries. At this time the eastern boundary of their traditional territory extended from what is today the upland terrain between the towns of New London and Waterford. Their lands extended to the northeast beyond the Eight Mile River encompassing much of what is now the three Lyme towns and a portion of Salem (Stiles 1754-1793). The territory then crossed the Connecticut River, proceeded westward along the boundary between what are now the towns of Haddam and Chester, taking up the approximate townships of Westbrook, Clinton, and probably parts of Madison (Field 1819). The boundary of this territory was probably loosely defined and corresponded to the upland sections between drainages (Snow 1978). Figure 1 shows the approximate geographic boundaries of the Nehantic tribal territory.

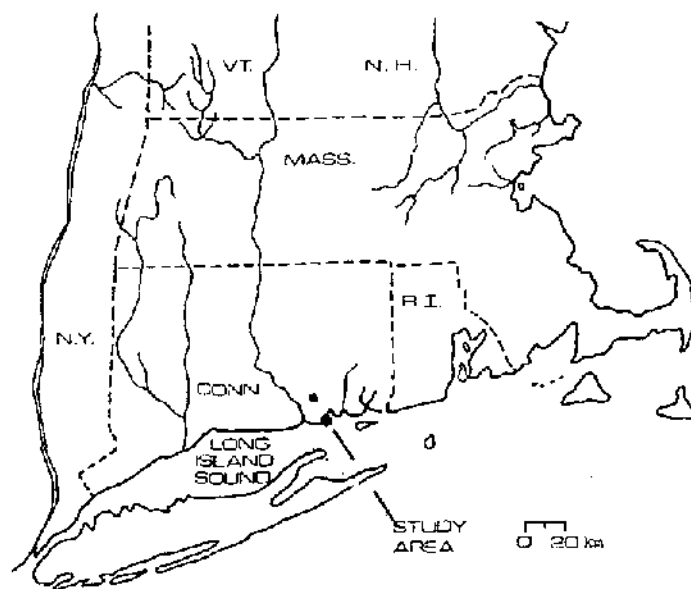


Figure 1. Map of Connecticut. Study area Lyme and East Lyme.

The traditional core of this Nehantic territory was situated in the present town of East Lyme (Niantic) on the western shore of the inner Niantic Bay in the region presently known as Saunder's Point and Oswegatchie (Williams 1643). This Nehantic village was known as *Chebynaux* according to Stiles (1754-1793). A region approximately 1.5 miles southwest of this village was subsequently chosen by the

Colonial Assembly as the location for the Nehantic reservation (Connecticut Public Records 1672). For a demographic description of the Reservation in 1761 see Table 1. Speck (1918, 1928) identified a pre-Contact territory for the "Niantic" that had a more eastern orientation and continued to western Rhode Island. This interpretation complemented Speck's theory of the Mohegan-Pequot intrusion into the Niantic territory that essentially bifurcated Niantic into an east and west home range.

TABLE 1. NEHANTIC TRIBAL MEMBERS RESIDING ON THE RESERVATION IN 1761, BASED ON EZRA STILES ITINERARIES, I-397, 10/7/1761

Note: This personal observation made by Stiles in 1761 includes a count and identification of tribal members seen on the Reservation, their relationship, and a description of the kind of dwelling in which these people were residing.

Nehantic Tribe

<u>Families</u>	<u>Sons</u>	<u>Daughters</u>	<u>Abode</u>
George Waukeet	2	4	1 wigwam
Jno. Lethecote	1	5	1 wigwam
Jno. Mohegan	0	4	2 wigwams
Philip Occuish	4	3	1 house
Jacob Occuish	0	0	1 house
Jno. Tatsen	4	1	1 house
Dan Waukeet	1	1	1 wigwam
Sam Waukeet	2	1	1 house
Ben Sobuck	2	1	1 wigwam
Theo. Sobuck	2	1	1 house
<u>Widows</u>			
Sobuck	6	1	house
Nonsuch	3	1	house
Tubsha	0	6	house
Sue	0	0	house
Piunko	4	1	house
Tatsun	3	0	house
Occuish	0	0	
Ina Chesno	0	0	house

Plus: William Sobuck, Dan Bagnie, M. Waukeet, Dan Silas, Jos. Nonsuch, Jos. Sauncy, Reuben Taligen, Thom. Sobuck, Jim Talgia, Sam Waukeet, Jona Nonsuch, M. Lethecote, Wm. Tatsen
Thomas Tatsen- total of 85 in tribe in this area at this time.

The term "West Nehantic" is clearly a recent invention initiated by Charles DeForest (1851) and later used by the State of Connecticut. There are no seventeenth-, eighteenth-, or pre-mid-nineteenth century documents that specifically identify the "West Nehantic" as a group. All of the seventeenth- and eighteenth-century documents including the inclusive accounts held within the proceedings of the Colonial Assembly, the diary of Joshua Hempstead (1711-1757), and Ezra Stiles' *Itineraries, Correspondence, and Miscellaneous Papers* (1754-1793) clearly relate only to Nehantic with no differentiation between East or West.

Deforest (1851) first, then Speck (1918, 1928) at the beginning of the 20th century made the distinction of East and West Nehantic. Speck's ethnographic studies are all that exist from the standpoint of first-hand anthropology. He categorized as independent tribes the various groups in southeastern New England. While he certainly witnessed the intertwined kin and residence pattern, as well as language similarities of these groups, he failed to consider the potential that the Native American peoples of southeastern Connecticut and Rhode Island had been inherently interrelated for centuries.

I offer as an alternative hypothesis that the tribal designation that the early colonial authorities placed on the various southern New England groups may, in many respects, be a European construct rather than a cultural reality. While today these organizational terms are valid in a political context, from a cultural historical perspective they are less reliable.

POPULATION

Estimates of the number of Nehantic people living in the "western" area in what is now East Lyme, Lyme, and Old Saybrook at the time of contact are extremely difficult to formulate. During the first decades of the seventeenth century the estimated population of "West" Nehantic individuals was over 600. However, immediately after 1620 the population had been appreciably reduced and Salwen (1978:169) suggests that there were only approximately 250. This apparent population reduction may reflect decreases due to the epidemics of 1617-1619 that appear to have ravaged New England's Native American population (Williams 1643).

Historic accounts by Ezra Stiles (1754-1793) suggest that in 1712 there were 100 Nehantic men residing at the Niantic reservation. This would conservatively suggest a population of 300 individuals if one woman and one child were associated to each male. If in fact this early eighteenth-century count and estimate is correct, a slight increase in population may have occurred following the initial onslaught of disease and subsequent European stimulated culture change.

This increase in population may have been the result of adoptions of other local Native Americans whose groups had been dispersed or who had become fugitives from the colonial authority. This was clearly the case with Pequot refugees coming to Nehantic in 1637. Also additions to the count of reservation non-whites may correspond to the influx of African American runaway or freed slaves who had been subsequently adopted. This clearly occurred in the case of the Montauk at the eastern end of Long Island (Stiles 1754-1793).

For the later part of the eighteenth century the evidence is that population decreased sharply. The 1756 Colonial census counted 94 "Indians" in Lyme. In 1761 Stiles noted that there were only 85 people living on the reservation. In 1783 Stiles noted that there were 15 families and by 1793 there were 7 or 8 families and only 30 people on the reservation. Finally, during the mid-nineteenth century, Deforest (1851) reports that there were only 10 persons residing on the "West" Nehantic reservation. In 1870 the State of Connecticut declared the "tribe" extinct. Yet, Mercy Nonesuch Mathews (1903) stated in a magazine interview that "They may declare me extinct, but that does not make me extinct."

The apparent decrease in population after 1712 may not accurately represent the decrease of Nehantic population. The counts predominantly reflect those individuals who were residing at the reservation and not necessarily those that were living elsewhere. Stiles remarks that this was a factor affecting his count in 1761.

Another factor in the decrease in population of southern New England Native American groups was emigration. This clearly occurred during the seventeenth, eighteenth, and nineteenth centuries. After King Phillip's War many of the southern New England groups relocated toward the western fringes of the colonies. Later, some members of this same group moved further westward through New York and finally ended up in the western Great Lakes. While the Nehantics at the Lyme Reservation were not actively involved in King Phillip's War, as a result of the hostilities some individuals may have participated in the Stockbridge movement as reported by Sargent in his correspondence with Stiles (1754-1793).

It is also clear from reviewing many of late eighteenth- and early nineteenth-century land and probate records of Lyme that many Nehantics were involved with the Brothertown relocations. This was a westward movement by southern New England and New York Native Americans. Many of the Native Americans associated with the Eleazer Wheelock school in Lebanon, Connecticut urged their tribal members to join a Native American Christian praying community that was initially to be in Oneida country in New York. Along with Nehantic were Narragansett, Mohegan, Pequot, Mashpee, Mohawk, Montauk and Delaware (McCallum 1932). Individuals that can be definitively identified as relocating are Sarah, Joseph, Dolly, and Aaron Poquiantup as well as Rhoda Charles the daughter of Joseph Occuish. They were recorded as formerly of Lyme but residing at Brothertown, New York (Lyme Land Records 1812).

RESERVATION LANDS

In 1671 the Colonial Assembly directed three of its members, James Steele, Hugh Walls, and Ensign White, to go to Lyme and determine what was between the Connecticut and Pequot Rivers and set aside a suitable reserve for the Nehantics (Connecticut Public Records). The following year these individuals reported to the Colonial Assembly that a three hundred acre tract should be set aside for a Nehantic Reservation. This was situated on the northern and eastern section of Black Point and was the area where these people were residing (Deforest 1851). Coupled with these Reserved Lands were hunting territories north and east of Black Point. These were lands that were described as lying south of the East Branch of the Eight Mile River and encompassed within the present northeastern part of Lyme and southwestern corner of Salem and known as the Gungy area (Figure 2).

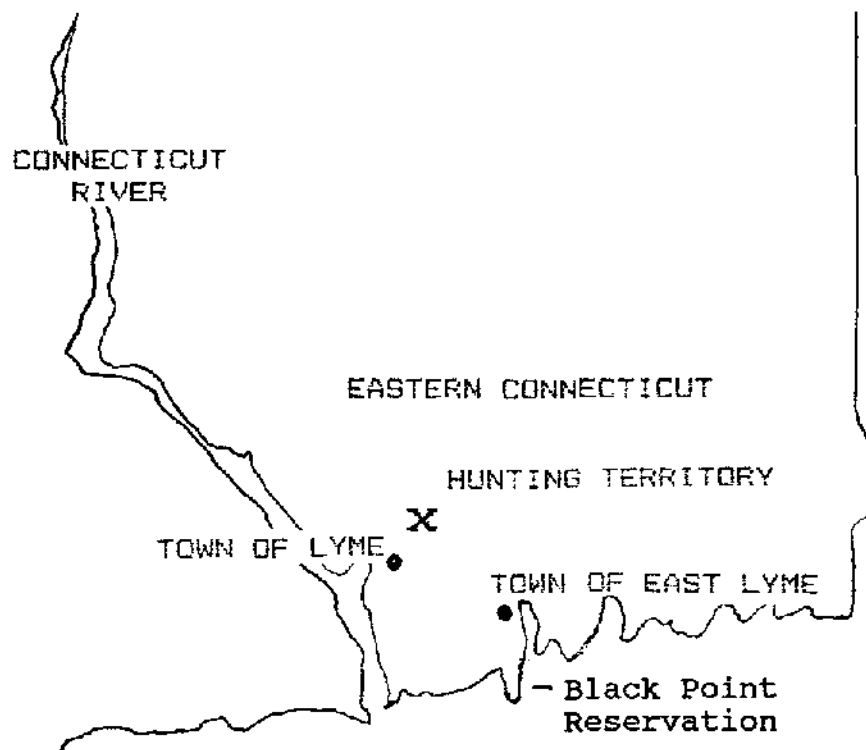


Figure 2. Black Point Nehantic Reservation and hunting territory.

The regions selected as "Reserved lands" were evidently sparsely inhabited by the English and suitably isolated, therefore limiting the amount of potential interaction between groups. However, this situation did not last very long as English encroachment began soon after the establishment of the Reservation. Documents show that not only did the English establish farmsteads on the northern, western, and southern regions of Black Point but also arranged various "herbage" or farming rights and leased "Indian Lands" (Connecticut Public Records 1693). In the beginning of the eighteenth century several complaints were made to the General Assembly by the Nehantics stating that Englishmen had enclosed a pasture of considerable size out of the 300 acres (Connecticut Public Records 1715).

The Connecticut Public Records for October 1762 document a General Assembly decision concerning the Upper Hundred, the most northern third of the reservation. Some of this land had been under lease agreement for many years. However, there were several complaints made by the Nehantics that encroachment into non-leased lands was occurring. One complaint was directed to the General Assembly that Edward Champlin's cows were continually trampling the Nehantic corn fields. The decision was made that the Upper Hundred was to be divided equally between "the Indians", Edward Champlin, Joseph Smith, and Elijah Beckwith. The Indians received the western portion which included "the highway down Black Point" and the Englishmen received the eastern portion. Situated within this eastern portion now ceded to the English was the Nehantic Burial Ground. This spot was excepted from the decision and the Nehantics were granted "the Perpetual Use of their Burying Place" (Connecticut Public Records).

It is possible to establish from the land records each family's holdings, their neighbor's boundaries, and the land use. Tracking these parcels through time one can see how the land was eventually broken up and acquired by non-Native Americans. Joshua Powers in the 1780s gained access to lands near the western boundary of the Lower Hundred through various "herbage rights" that had been previously established to the Prentis, Smith, and Manwaring families (Lyme Land Records).

Local non-Native American farmers were establishing a foothold on Reservation lands through long term lease agreements. As time passed, such leases turned into long term land sales where Nehantics were holding mortgages. Such sales were directed by the Indian Overseer or Agent and acknowledged by the Connecticut General Assembly. It is unclear whether the Nehantics were aware of the distinction between long term leases and their holding of mortgages where eventually the land was no longer theirs. In both approaches there was an exchange of money; however, with the latter at the expiration of the mortgage agreement the land belonged to the non-Native American farmer. It is possible that the Nehantic interest was solely in ensuring an income for the tribe and that they did not understand the long term implications.

In the case of the parcel to which Joshua Powers gained rights, his sons gained full ownership by the 1830s. This parcel on the western boundary of the reservation was 43 acres and in the "Lower 100." The parcel was described as a mowing lot and referred to as the "SOBUCK LOT" (Lyme Land Records 1826).

Other approaches to the acquisition of Nehantic lands were recorded in the daily journal of Moses Warren (1789). An entry in the journal illustrates the encroachment upon the Reservation. On July 1st Moses Warren, acting as a surveyor for the court, was assigned to "straighten the line" between Joseph Smith, George Jeffrey, and Isaac Piunko. The net affect of this survey was to grant Joseph Smith part of the lands owned by George Jeffrey and Isaac Piunko. Jeffrey and Piunko were Nehantics.

DEMOGRAPHY

The purpose of the land records and surveys was to clearly document transactions and produce a legal foundation for future property exchange. However, such documentation also provides for the researcher much information concerning residence and kin relations, as well as the kind of activities that were going on in a particular area. Beyond the aspect of land acquisition, these records in combination with other forms of documentation generate a very complex picture of the Reservation and how it functioned during the Colonial and early American periods.

From Stiles (1754-1793) we know that Piunko was listed as being a Nehantic widow living in a house with 4 sons and 1 daughter. In 1757 the house of Gideon Quiquaquem in the Middle 100 was sold to the commissioners of a Boston Christian society to erect an Indian school at Nehantic. As legal heirs to Gideon, Hannah and Joseph Piunko made this transfer (Lyne Land Record 1743). George Jeffrey, also noted in the Moses Warren day book, was listed on the 1751 land records as a mulatto man (Lyne Land Record 1741).

The Smith, Prentis, and Manwaring families ringed the Reservation to the west during much the eighteenth century. These farmers not only maintained active commerce with the rest of the colonial society but also maintained a link with the "Nehantic (Tribe) Proprietors."

The Joshua Powers farm maintained day books or ledgers recording the family's Black Point farm business. As Table 2 shows, these documents demonstrate the eighteenth- and nineteenth-century use of "Negro" slaves, mulattos, and "Indians" on the farm (Powers 1804-1821).

TABLE 2. AFRICAN AMERICANS OR MULATTOS ASSOCIATED WITH LYME

<u>Name</u>	<u>Ref. Date</u>	<u>Lyne "Family"</u>
Oxford	1733/34	Richard Lord
Temperance Still		" "
son Zacheus	728	" "
son Abiah	1731	" "
son Jordan	1732	" "
son Joel	1734/5	" "
dau. Hepzibah	1737	" "
Dido	1750	Stephen Prentis
Negro Man	1743	Thomas Manwaring
Indian Woman	"	" "
mulatto son	1743	" "
6 negro slaves	1755-1769	Mathew Griswold
3 mulatto slaves	" "	" "
Prince	1777	" "
son of Prince	"	" "
bro. Jim	"	" "
sis. Peg	1767	" "
Frank Proveddo	1745/46	Samuel Powers
son Frank	1791	" "
Isaac	1791	" "
Sy mulatto	1776	Joshua Powers
Abraham Wooden	1779	" "
Jack	1770	Thomas Griswold
Jack Nebo	1780	James Huntley

As noted before, the property was formerly leased by the Prentis family who also maintained mulatto servants in the early eighteenth century (Hempstead 1751:580). As early as 1750, Jonathan Prentis was recorded to have a mulatto servant named Dido living with his family on the farm. Joshua Hempstead (1711-1757:580) listed her as being "1/2 negro and 1/2 Indian." In 1743/44 Thomas Manwaring another neighbor to the west of the Reservation had a Negro slave of African descent who was married to an "Indian woman." A son from this marriage was recorded as dying on February 10th and was identified as a "mulatto" (Hempstead 1711-1757:421).

The documents indicate that the Sobucks were associated with the lot immediately west of Joshua Powers' leased lands. Ezra Stiles (1754-1793) in 1761 recorded that there were three Sobuck families. Ben Sobuck and his wife had two sons and one daughter. Stiles noted that they lived in a wigwam. Theodore Sobuck had 2 sons and one daughter and lived in a house. The "Widow" Sobuck had 6 sons and 1 daughter and lived in a house. In the Stiles count there was also a William Sobuck and a Thomas Sobuck living on the Reservation.

On the Gungy tract, a separate parcel that was granted to the Nehantics as a hunting territory in 1672 in the northeastern part of Lyme is the burial of Adam Sobuck (Pfeiffer 1993). Adam died in 1777 and may have been one of the sons counted by Stiles 16 years earlier.

The Nehantic connection to Joshua Powers is clear in the records. Joseph Sobuck and his son were listed in Joshua Powers' account book as working on the Lyme farm in 1805. In 1811 Joshua Powers billed Deborah Sobuck for 5 gallons of cider. Joshua Nonesuch married Mercy Sobuck and was listed as working on the Powers farm from 1804 - 1813. Abraham Occuish was paid by Powers in 1805 and then removed to Brothertown, Oneida county, New York where he died in 1813. Daniel, Jonah, and Samuel Waukeet all worked sporadically for Joshua Powers from 1804-1813. Daniel was married to Ann Occuish and Samuel was married to Hannah Ashbo. Both the Occuish and Ashbo families had important religious leaders living on the Reservation who served as ministers (McCallum 1932; Smith 1916).

Joshua Powers, while employing Nehantics, also had African American slaves prior to and during the Revolution. Abraham Wooden was listed as a runaway slave from the Powers farm in 1779. The records show that Powers had in his service a mulatto slave named Sy who also ran away three years before in 1776 (Brown and Rose 1980). Listed in the inventory of Samuel Powers in 1791, Joshua's father, were "Negro" slaves Isaac and Frank. Powers in 1745/46 buried a "Negro" male slave "Frank Proveddo" who was probably the runaway's father (Hempstead 1711-1757:454).

It is clear that there is an increase in the intermixing of Native American, African American, and whites during the close of the eighteenth century. Stiles devoted much time to describing and decrying this situation in his sermons and miscellaneous correspondence. The religious community clearly reacted negatively to this mixing of the races. The Stiles papers are a strong testament to these ongoing cultural changes.

The intermarriage of African and Native Americans is clearly evident from Samson Occum's report to John Devotion (Stiles 1754-1793) concerning "The State of the Indians at Montauk on Long Island" during the early 1760s. Occum's report is significant on several fronts. It clearly relates the cultural tie of the "Montauks" to the Nehantics but also demonstrates and decries the process by which mulattos are produced.

It should be noted that there is at least some evidence for the social exclusion of mulattos by not only whites but also by Native Americans. Stiles notes this phenomenon in western Rhode Island for the Nehantics living there. He documents the practice of seventeenth-century infanticide for children who were the product of interracial relations.

In the Lyme area there are clear references within the town records that illustrate the relationship between African and Native Americans. Gov. Mathew Griswold III, who was born in 1716 and died in 1799 was a significant slave buyer, seller, and trader (Brown and Rose 1980). Of the nine slave children that he had baptized in the Lyme Church between 1755 and 1769, at least three are listed as mulatto. The Griswolds kept both African American slaves and Native American workers. Mathew Griswold sold Prince, his male slave, and Prince's son in 1777. Peg, a girl servant, was in Mathew Griswold's possession in 1767. Jack was probated to Lucy, the daughter of Thomas Griswold in 1770.

During the same period Richard Lord was also dealing in slaves. Oxford, his adult male slave, fathered four male mulatto offspring. The mother was Temperance Still who was half Indian. While Temperance and her daughter were subsequently sold to Jacob Loomis of Colchester, Richard Lord maintained possession of the father and male children (Brown and Rose 1980).

Toward the end of the eighteenth century and beginning of the nineteenth there is apparently an increase in Native American indenture. Part of this was due to criticism leveled by English loyalists

pointing out the hypocrisy of American colonists proclaiming their independence from England while simultaneously maintaining slaves. The use of indentured Native Americans instead of enslaved African Americans served to lessen the basis for faultfinding and reoriented the approach to "contractual" labor of a group of people who were treated by governmental policy as non-persons.

Many noted individuals gained the service of indentured persons. Ezra Stiles arranged for the seven year old son of Polly Waukeet to be bound out to him. Aaron Waukeet's service to Stiles was to last until the boy reached his 21st birthday. By the end of this indenture Stiles was to have taught the boy to read the Bible and to have supplied him with a suit of clothes. The Waukeets were Nehantic.

On the Nehantic Reservation Samuel Waukeet, a Niantic Indian boy, was indentured to John Noyes Jr. of Lyme and was listed in servitude in 1805. Samuel subsequently worked for Sylvanus Griswold in 1807 - 1808 and after that served Joshua Powers on the Lyme farm. Mercy Ann Nonesuch was bound out at the age of 7 to Ethelinda Griswold of Lyme in 1829. She remained in the service of the Griswolds for nearly twenty years until she married Henry Mathews, a Mohegan, in 1846 (Brown and Rose 1980).

Cuff Condol took up residence in northeastern Lyme in the Nehantic hunting territory that was south of the East Branch of the Eight Mile River. He was an emancipated slave whose freedom had been bought by Sarah Silas, Joseph Pomham, and Daniel Wright in 1787. Silas and Pomham were probably at least part Nehantic themselves (Caples 1955). Sarah Silas was a daughter of Dan Silas who was recorded on the Stiles Reservation list in 1761 (Pfeiffer 1993). The Pomham name was listed in a letter written by Callendar to Ezra Stiles (1754-1793) indicating that Pomham was an important sachem family for the Nehantics during the early 1700s in western Rhode Island. Joseph's relationship to these people is unclear, however, various entries in the records indicate his Native American background. Daniel Wright was African American and recorded in the 1790 census as "Negro".

George Jeffrey (Sr.) was referred to as a "mulatto man" in the Lyme Land Records (1751). He lived along the western boundary of the Powers farm next to Phillip Occuish (Lyme Land Records 1751). Jeffery also had land in the hunting territory (the Gungy tract) in northeastern Lyme (Lyme Land Records 1751). Ten years earlier Sarah and Hannah Jeffrey were baptized in Lyme in 1741 and were recorded as "Indians." In 1782 Eunice Jeffery (widow of George Jeffrey) and her daughters Sarah and Phoebe (Jeffrey) Nebo and Jack Nebo sold their land that they received from their father (or father-in-law) to George Jeffrey (Jr.) their brother (Lyme Land Records 1783). Jack Nebo was the "Negro man" of James Huntley of Lyme. The Huntley family had a farmstead in the northeastern part of Lyme in the immediate vicinity of the Jeffrey's holdings. The association of the Jeffrey name to both Native and African American heritage is significant. George's son Joseph married Malinda Condol, Cuff Condol's daughter. The Jeffrey connection with the Nehantic tribe and African Americans can be documented for over seventy-five years along the Reservation and in the northeastern area of Lyme (Tables 3, 4).

After the Revolution there was an established pattern of local farmers in the Lyme area hiring African Americans, Native Americans, and mulattos. Benjamin Robbins "Indian", owned land in the Lower 100 of the Nehantic Reservation at Black Point that he eventually sold to Isaac and Joseph Poquiantup (Lyme Land Records 1764). Seth Tiffany had Aaron and Hiram Robbins (recorded as "natives") working for him at his northeastern Lyme farm in the first decade of the 19th century (Tiffany 1810-1820).

The Mumfords, who lived slightly north of Seth Tiffany, kept Taphena Tatsen during the first half of the nineteenth century. Taphena was the daughter of Jonathan Tatsen who was listed on Stiles 1761 Nehantic Reservation list (Perkins 1905). Her brother Solomon was killed in the American Revolution, being part of the 1st regiment under Captain William Richards. Thomas, probably another brother, enlisted the same day in 1778. He was captured in 1778 and subsequently returned to fight again, serving until 1780 (Brown and Rose 1980). The Tatsens and Robbins were tied together through a marriage between Taphena Tatsen and Aaron Robbins (Lyme vital Records 1800). Not only did this marriage tie the two Nehantic families together but it also tied the neighboring farmers together who were employing mulattos, African, and Native Americans.

TABLE 3. NATIVE AMERICANS ASSOCIATED WITH HUNTING TERRITORY IN GUNGY TRACT

<u>Name</u>	<u>Approx. Date</u>
Hannah Jeffreys	1741
Sarah Jeffreys	1741
Phebe Jeffreys	1782
Adam Sobuck	1777
Joe Pomham	1780-1805
Sarah Silas	1780-1800
Taphena Tatsen	1800-?
Aaron Robbins	1800-1823
Hiram Robbins	1810-1815
Sampson Robbins	1810-1815

TABLE 4. AFRICAN AMERICANS ASSOCIATED WITH GUNGY TRACT

<u>Name</u>	<u>Ref. Date</u>
George Jeffrey	1751 "Mulatto man"
Eunice Jeffreys	1782 wife of Geo. Sr.
Cuff Condol	1787 Eman.
Malinda Condol	1810?-1826 marriage.
Joseph Jeffreys	" " "
Jack Nebo	1780 slave of James Huntley
Phebe (Jeffreys) Nebo	1782
Daniel Wright	1790 census

The Mumfords were very active in the African slave trade and were responsible for hundreds of African American slaves being brought to the area (Perkins 1905; Bingham 1978). Venture Smith, a six year old prince, was stolen from his homeland and brought on a slave ship to America from Dukandarra Guinea in 1729 by Robinson Mumford (Bontemps 1971). According to Perkins (1905) and Bingham (1978) the Mumfords of Salem and northeastern Lyme had a "gang" of African American slaves numbering over 300 individuals. They also kept Nehantic slaves who were later freed and kept on as servants.

CONCLUSION

Anthropologists, archaeologists, historians, as well as citizens of contemporary Connecticut need to appreciate and understand the cultural processes associated with Native American reservations. The Nehantic Reservation serves as an excellent model.

From a contemporary and culturally aware perspective, it is especially necessary to point out that there is an obvious historical and cultural explanation for physical variation within various Native American communities and reservations. For some of us these populations do not correspond to our misguided expectations or misconceived stereotypes. As a result some have offered that "these people don't look like Indians."

These stereotypes are a direct result of traditional approaches to the past clearly missing the mark. Some of this is due to legitimate error. However, I suspect that there has been an effort by traditional

interpreters of the past to obscure southern New Englander's participation in slavery and our generally abominable treatment of both Native and African Americans.

REFERENCES CITED

- Allen, William
1857 *American Biographical Dictionary*. 3rd edition J.P. Jewett, Boston.
- Bingham, Alfred
1978 *Squatter Settlements of Freed Slaves in New England. Connecticut Historical Society* No. 41.
- Bontemps, Arna
1971 *Five Black Lives. The Autobiographies of Venture Smith, James Mars, William Grimes, The Rev. G.W. Offley, and James L. Smith*. Wesleyan University Press, Middletown Connecticut.
- Brown, Barbara and James Rose
1980 *Black Roots in Southeastern Connecticut, 1650-1900*. Gale Genealogy and Local History Series. Vol. 8.
- Caples, Joseph
1955 *The Memoirs of Joseph Caples*. Unpublished Diary. Connecticut State Library, Archives Room.
- Connecticut Public Records
1672, 1693, 1715, 1734, 1762 Connecticut State Library, Hartford.
- DeForest, John W.
1851 *History of the Indians of Connecticut from the Earliest Known Period to 1850*. W.J. Hamersly, Hartford.
- Field, David D.
1819 *Statistical History of the County of Middlesex, Connecticut*. Clark and Lyman, Middletown.
- Hempstead, Joshua
1711-1757 *The Diary of Joshua Hempstead*. Unpublished Diary. New London Historical Society.
- Lyme Land Records
1665- Town of Lyme, Connecticut.
- Lyme Vital Records
1665- Town of Lyme, Connecticut.
- Mathews, Mercy N.
1903 *Last of the Nehantics. Connecticut Magazine* No. 8, Connecticut Magazine Co. Hartford.
- McCallum, John D.
1932 *Letters of Eleazer Wheelock's Indians*. Dartmouth College Manuscript Series No.1, Dartmouth College Publications.
- Perkins, M.E.
1905 *Chronicles of a Connecticut Farm*. Boston, published by author.
- Pfeiffer, John E.
1993 *Cultural Resources in Hartman Park, Lyme, Connecticut: An Archival and Archaeological Project*. Unpublished Ms., Hartman Park Commission, Town of Lyme.
- Pfeiffer, John and Donald Malcarne
1989 *An Investigation Into the Ancient Burial Ground at Crescent Beach, Niantic, Connecticut. Archaeological Society of Connecticut Bulletin*, 52:61-69.

Powers, Joshua

1804-1821 Ledgers of the Joshua Powers Farm. Unpublished ms. Connecticut State Library.

Salwen, Bert

1978 Indians of Southern New England and Long Island: Early Period. In *Handbook of North American Indians: The Northeast*, edited by Bruce Trigger, 15:160-176. Smithsonian Institution, Washington, D.C.

Smith, Jane

1916 *The Last of the Niantics*. East Lyme Historical Society, East Lyme.

Snow, Dean R.

1978 Late Prehistory of the East Coast. In *Handbook of North American Indians: The Northeast*, edited by Bruce Trigger, 15:58-69. Smithsonian Institution, Washington, D.C.

Speck, Frank

1918 Remnants of the Nehantics. *Southern Workman* 47(2).

1928 Native Tribes and Dialects of Connecticut. 43. *Annual Report of the Bureau of American Ethnology*.

Stiles, Ezra

1754-1793 *Itineraries, Miscellaneous Papers, and Correspondence*. Unpublished ms. Beinecke Library, Yale University.

Tiffany, Seth

1810-1820 Ledgers of the Seth Tiffany Farm. Unpublished ms. Connecticut State Library.

Warren, Moses

1789 Journal. Unpublished ms. Connecticut Historical Society, Hartford.

Williams, Roger

1643 *A Key Into The Languages of America*. Gregory Dexter, London.

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