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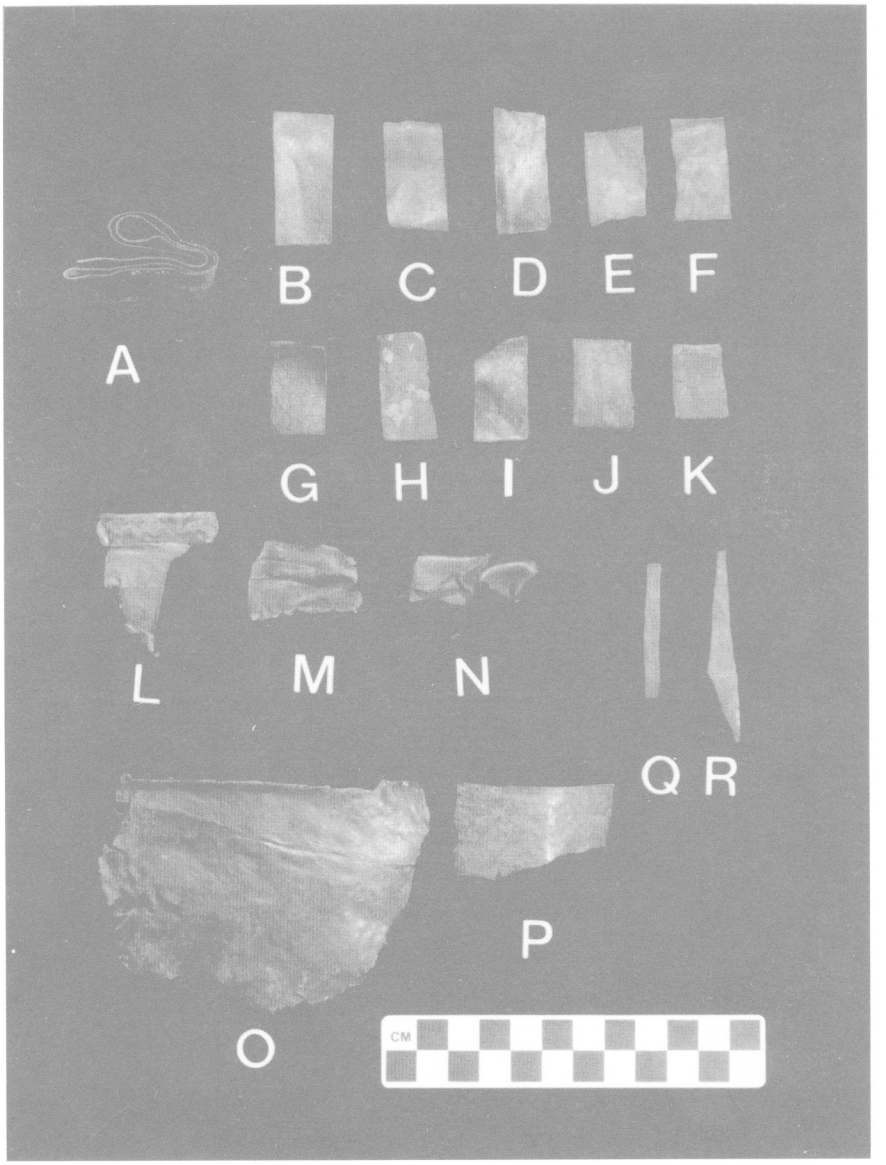

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AN EARLY CONTACT NATIVE SITE ON THE UPPER ST. CROIX RIVER

Steven L. Cox
Maine State Museum

INTRODUCTION

Site 138.4 is located on East Grand Lake on the St. Croix River. It was discovered in 1994 during a Phase I mitigation survey associated with re-licensing of the Georgia-Pacific Forest City dam (Cox 1995).

The site lies on a prominent five-meter high sandy bluff, probably an eroded esker, which affords an excellent view up and down the lake. The landform drops steeply to the south, east and north, and more gradually to the west (Figure 1). It is fronted to the south by a sand beach and to the east by a low terrace leading to the water. The top has been partially cleared of vegetation and there is a cabin to the rear of the site area.

The face of the bluff in front of the site is severely eroded. It rises at about a 70-80? angle and is largely unvegetated, with major slumping and undercutting present. The landowners estimate that the bank has retreated approximately two meters since they purchased the property in 1984. In 1995 they put in a low wall of boulder and cobble riprap which appears to have slowed but not halted the erosional damage.

During the Phase I survey we observed that the surface of both the beach and the eroding bluff was littered with prehistoric cultural material. In addition to flakes, the beach produced a small flake core and a heavily waterworn possible ground stone point. From the face of the bluff we collected 26 flakes and a small asymmetric non-stemmed biface of grey chert, probably a knife. Some of the cultural material on the slope was visibly eroding out of intact deposits at the top of the bank. No test pits were dug in the site area during Phase I.

We returned to the site in 1997 for Phase II testing. The Phase II datum was established in front of the cabin, with grid north corresponding to magnetic north. We first excavated a dozen 50 cm test pits (Figure 1). The initial tests indicated that much of the terrace around the cabin was disturbed, with intact deposits remaining only along a relatively thin strip of land at the terrace edge. Excluding test pits where we found cultural material in fill or highly disturbed deposits, the site extends approximately 27 meters along the terrace front and a maximum of 10 meters inland, and covers an area of 150 square meters.

Cultural material was most concentrated at the highest point of the terrace, on its eastern end, and this is where we opened an area excavation of eight square meters (Figures 2, 3), plus an additional one meter square near the northern site limit. In total we excavated 11.75 square meters at this site during Phase II.

All of the diagnostic cultural material was recovered from the eastern corner of the site, and it indicated that there were probably two cultural components on the site, a late prehistoric and an early historic occupation. It also seemed possible that all of the material represented a single early contact component, with European trade goods alongside more traditional lithic and ceramic artifacts.

The contact period component at 138.4 was clearly an important one. The Phase II tests produced more than 40 historic artifacts as well as faunal remains and features attributable to this component. While not precisely dateable, all of the historic material appeared to date to a single, rather short-lived occupation, probably from sometime in the 17th century.

Not long after the Phase II survey FERC ruled that for technical reasons the Forest City dam did not have to be licensed, and Georgia-Pacific withdrew further support for archaeology in the area. We remained concerned about the site because of its potential importance and severe erosion. In the summer of 1998 the author organized a volunteer crew for one week of work

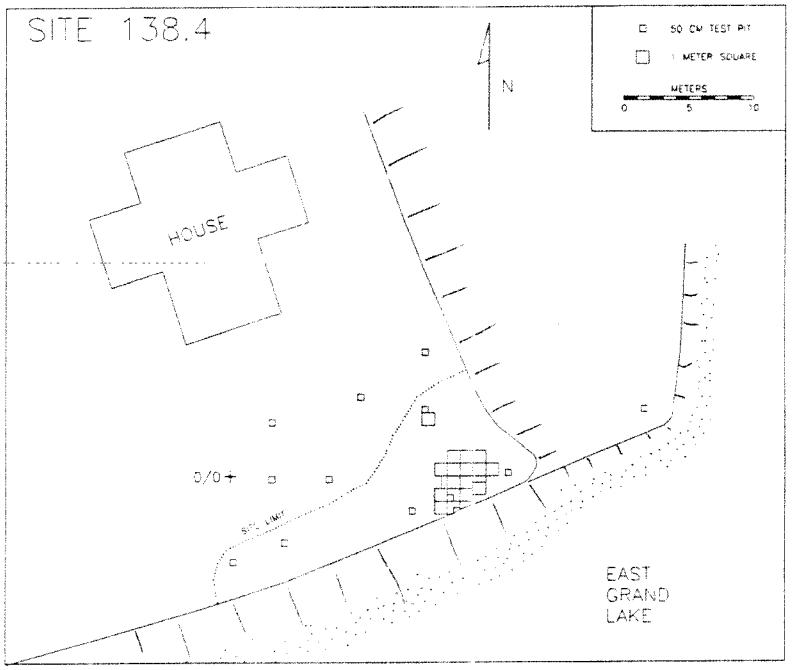

Figure 1: 138.4 Site Map Showing 1997 and 1998 Excavations.

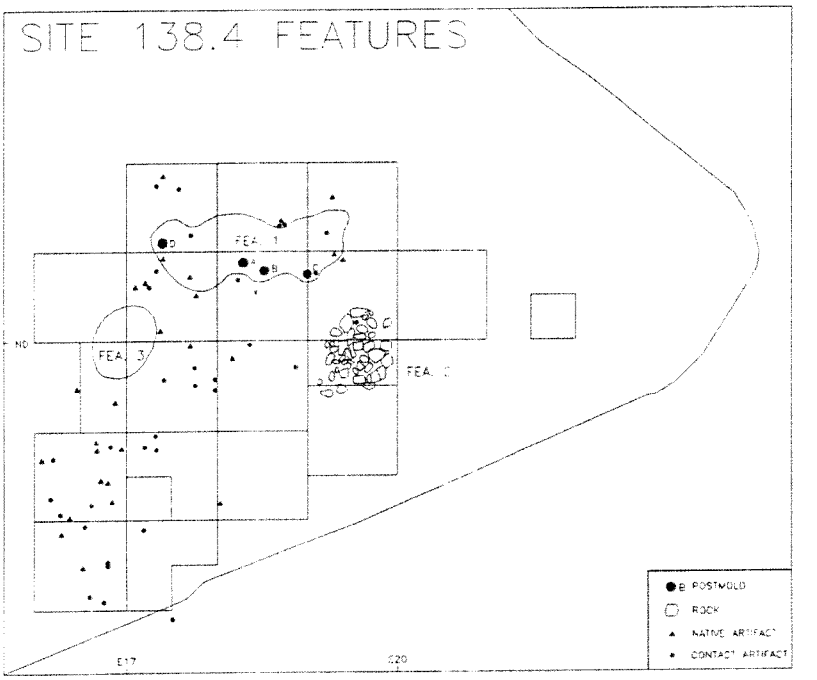

Figure 2: Main Excavation Area, Site 138.4.

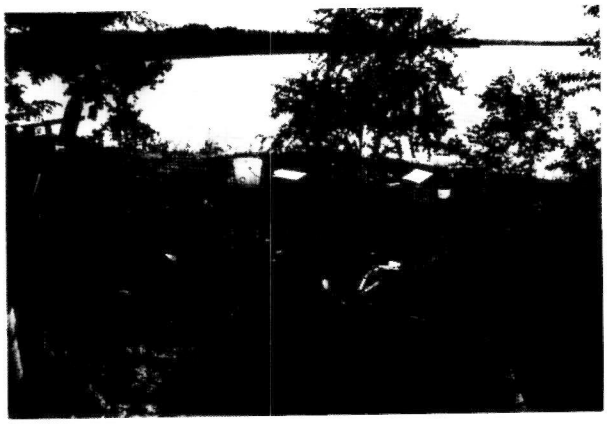

Figure 3: Main Excavation Area in 1997, Looking SE.

at the site, which resulted in the excavation of a further 8.75 square meters in the main area of the site (see Figure 2).

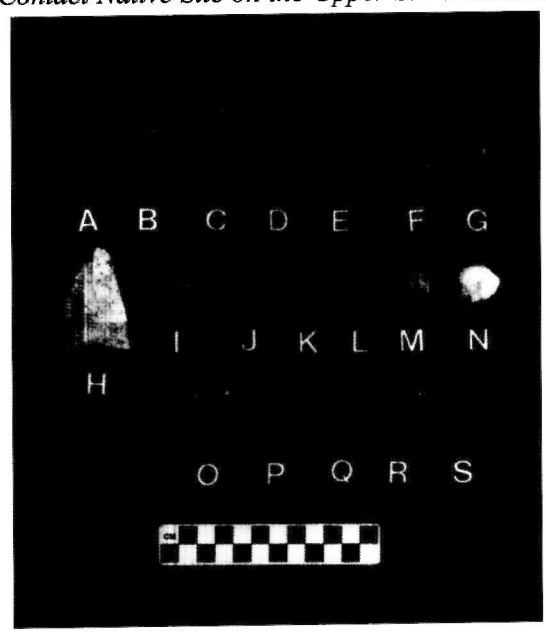

Figure 4: Native Lithic and Ceramic Artifacts.

Cultural Material

The prehistoric component includes both lithic and ceramic artifacts. Late Ceramic lithic artifacts include two side notched points, both with broken tips (Figure 4:A,B), five non-stemmed bifaces which are probably preforms for notched points (Figure 4:C-G), a small asymmetric biface with broken tip that may be a side-hafted knife (Figure 4:I), and seven small endscrapers (Figure 4:J-M). Two artifacts were found which may belong to an earlier prehistoric component - a large rhyolite biface tip (Figure 4:H) and a relatively thick quartz scraper (Figure 4:N).

Ceramic sherds from three different late Ceramic vessels were recovered. All of the vessels are shell tempered and relatively thin (4-8 mm), suggesting a relatively late placement within the late Ceramic period. Vessel 1 has a simple, flat rim and two zones of cord-wrapped stick decoration - vertical above and horizontal below (Figure 4:O-Q). Vessel 2 is similar to vessel 1 except it has a slightly expanded, rounded lip and horizontally applied cord-wrapped stick decoration just below the rim (Figure 4:R). Cordage on both vessels is Z-twist. Vessel 3 is undecorated and has a thickened or pseudo-collared rim (Figure 4:S).

A total of 62 contact period artifacts were recovered. These include 21 copper objects, 10 of brass, 2 of copper and iron, 13 of iron, and 15 of other materials including glass, kaolin and lead.

The most common historic artifact class consisted of short strips of copper cut or broken from a longer roll that served as stock. We recovered a dozen such cut strips (Figure 5:B-K) as well as a ca. 500 mm long rolled strip (Figure 5:A) that likely was itself cut from a copper kettle. The strips average 0.92 mm in thickness, and have an average length of 33.8 mm and width of 18.1 mm. They presumably served as preforms for beads and other copper artifacts.

In addition to the strips, we have 10 other copper or brass sheet fragments that are clearly from kettles or bowls (Figure 5:L-P). Two of these (L,M) are copper rim fragments with simple folded rims, and one (M) has a series of linear indentations below the rim similar to those found on a 16th century kettle from the Northport site in Nova Scotia and believed to replicate natural markings or spruce root lashing holes on birchbark containers

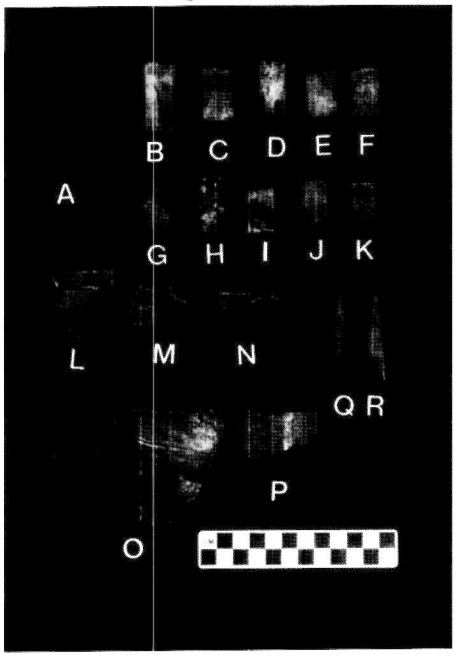

Figure 5: Copper and Brass Artifacts.

(Whitehead 1993:45). A folded piece of brass appears to be a fragment of a kettle lug (Figure 5:N). All but one of the other sheet fragments are of brass, and they tend to be somewhat thinner than the copper strips, ranging in thickness from 0.5 to 0.8 mm. None of the kettle fragments exhibit spiral hammering marks.

We recovered two nearly complete copper beads and a small fragment of a third. The two complete specimens are jammed together (Figure 8:upper right). Each is about 16 mm long and 2.5-3.0 mm in diameter. They are made from relatively thin sheet copper, about 0.5 mm in thickness.

Two brass objects of uncertain function were found. One is a pointed object whose upper end is broken (Figure 5:R). It measures 63 mm long, 10.5 mm wide and 2.5 mm thick, and may have served as a perforator or composite weapon part. The other is a small bar measuring 44 x 6 x 1.7 mm (Figure 5:Q). Also of either copper or brass is a small ring with one opening, probably a jewelry eyelet (Figure 5:center).

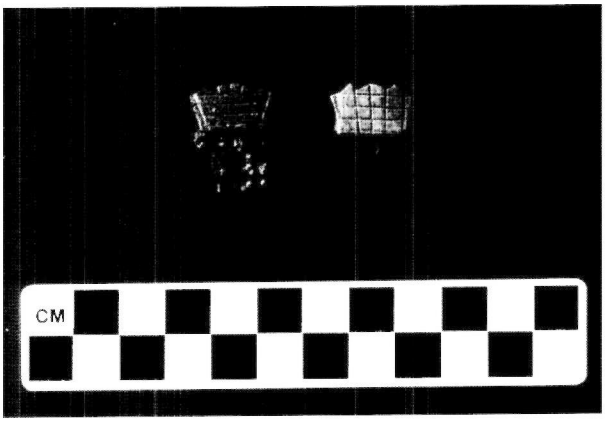

Figure 6: Decorated Knife Pommels.

Perhaps the most striking artifacts found were two knives represented by copper butt ends or pommels and fragments of iron tang and blade (Figure 6). The wedge-shaped pommels are 18 mm wide and are made from copper stock about 2 mm thick which has been crimped over the end of the iron knife tang. They bear stamped or incised cross-hatch and zigzag (wrigglework) decoration. Interestingly, The Museum's collections contain a virtually identical specimen, found by amateur Warren Schofield in a multicomponent Indian site at Mattawamkeag. The iron portions of the knife are badly corroded and only fragments survive, including portions of the tangs attached to the pommels and possibly a blade tip (Figure 7:E) that was found near one of the pommels. One of the tang remnants (Figure 6:left) has a rivet hole for attaching a bone or wood handle.

Other iron artifacts include a portion of a kettle bail (Figure 7:A), two wrought nails (Figure 7:B,C), a small iron bar of uncertain function (Figure 7:D), a small iron blade tip (Figure 7:G), another knife (Figure 7:F), an axe head (Figure 7:H), and a fish hook (Figure 8:lower left). The knife, which is bent almost double near the lower end of the blade, has a square rat-tailed tang rather than the broader scaled type associated with the copper pommels. The hook has an expanded proximal end with no sign of an eye, although such an eye could have

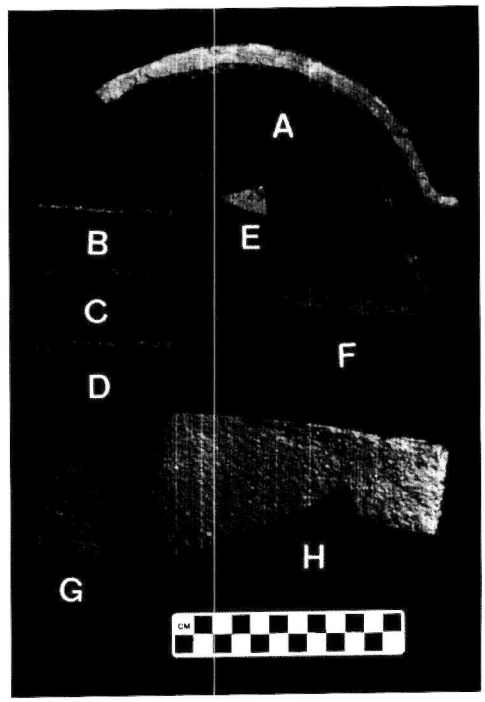

Figure 7: Iron Artifacts.

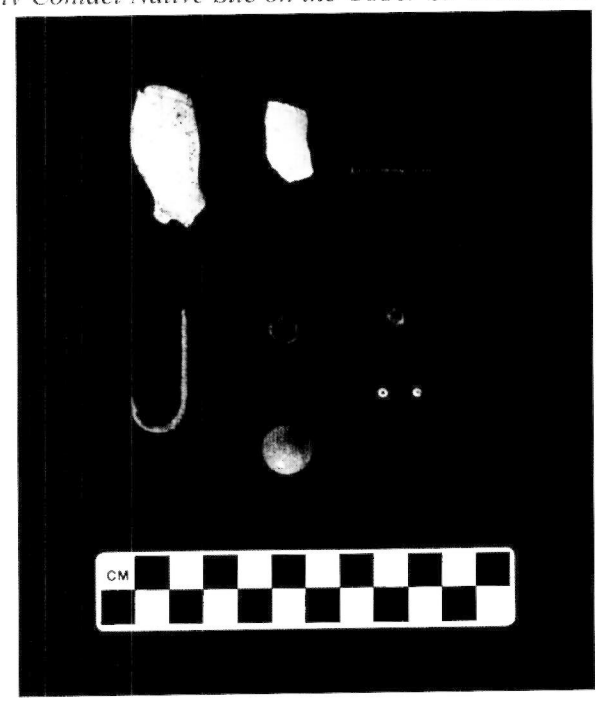

Figure 8: Miscellaneous Contact Artifacts.

been lost to corrosion.

The axe was found at the edge of the bank just to the south of our excavation area, sitting nearly vertically with a portion of the butt end exposed at the ground surface. It has straight upper and lower margins characteristic of 17th and early 18th century axes (Faulkner and Faulkner 1987:142). The socket hole was probably originally oval, but the back end of the tool has been heavily hammered and is now flattened. A portion of the rear socket edge is broken, but it is not clear if this happened during use or subsequent to deposition. There is also some evidence of hammering along the top edge of the blade.

Other metal artifacts include several small, unidentifiable pieces of iron, a musket or pistol ball 14.9 mm in diameter (Figure 8:bottom), and a small fragment of lead.

A complete kaolin pipe bowl and a fragment of another were found (Figure 8:upper left and middle). Both have rouletted rims. The complete specimen is a spurred belly bowl with a bore diameter of 6/64". It generally resembles the specimens assigned to Type V from Pentagoet (Faulkner and Faulkner 1987:168-169). Surprisingly, no pipe stems were recovered.

Three glass trade beads were found (Figure 8:lower right)). Two are small round white beads 3.0 mm in diameter which correspond to Kidd type IIa13. The larger specimen is a round opaque blue bead 6.6 mm in diameter (IIa40?). Both bead types are common in sites ranging from the late 16th century into the 18th century (Jeffrey Brain pers. comm. 1997) and thus are not very useful for precise chronological control.

Other artifacts attributable to the contact component include three flakes of mottled gray European flint, two of them with cobble cortex remaining, and a probable beaver tooth knife cut transversely at the proximal end.

Faunal Remains

More than 4,000 fragments of calcined (burnt) and uncalcined bone were recovered in our

TABLE 1: SITE 138.4 FAUNAL REMAINS			
IDENTIFICATION	CALCINED (MNI)	UNCALCINED (MNI)	TOTAL
LARGE MAMMAL	593	336	929
MAMMAL	6077	270	6347
MOOSE	13 (1)	79 (2)	92 (2)
DEER	1 (1)	0	1 (1)
BEAVER	132 (7)	94 (2)	226 (7)
MUSKRAT	0	6 (2)	6 (2)
PORCUPINE	2 (1)	1 (1)	3 (2)
OTTER	0	1 (1)	1 (1)
CANID	2 (1)	2 (1)	4 (1)
TURTLE	5	2	7
BIRD	3	0	3
DUCK	1 (1)	0	1 (1)
LOON	2 (1)	0	2 (1)
RAPTOR (hawk/owl)	1 (1)	0	1 (1)
PERCH	5	3	8
SHELL	0	1	1
TOTAL	6837	795	7632

excavation. Since no unburnt bone is known to survive from any prehistoric components in the region, aside from coastal shell middens, and no domesticates indicative of a later Euroamerican occupation were found, we attribute the uncalcined bone from this site to the contact period component. The larger calcined bone assemblage could be either prehistoric or historic. However, the similarities between the two assemblages, both in species representation and in their distribution across the site, suggest that they could well belong to the same component.

The faunal remains are summarized in Table 1. The calculated Minimum Number of Individuals (MNI) is the minimum number of individual animals from each species represented in the collection, based on duplication of skeletal elements. In other words, if we have two moose right femurs, we know that we are dealing with at least two moose. In terms of meat production, moose and beaver appear to be the most important animals, but it is quite possible that fish and birds are under-represented due to poor preservation of their relatively fragile bones. The duck bone is from a species smaller than an eider, while the raptor bone is from a small owl or hawk. A single small fragment of scallop shell is from a disturbed area in square S1.5E19 and is probably recent in origin.

Little seasonality evidence is present in the uncalcined assemblage and attempts to section moose and beaver teeth for seasonality were not successful due to poor preservation. The uncalcined assemblage includes teeth from a juvenile moose with deciduous premolars and 1st and 2nd molars present, and an unerupted 3rd molar. This combination suggests an age of 8-13 months (Peterson 1955:87), or roughly February to July. The duck and loon bones in the calcined assemblage indicate an open water (late spring through fall) season of occupation. Thus, if the calcined bones also belong to the contact period component, the evidence suggests a late spring to early summer (May-July) occupation.

Figure 9: Feature 1 Under Excavation, View to North.

charcoal. Aside from some calcined bone (not identifiable to species), the only cultural material found in the feature was a folded piece of sheet copper (Figure 5:N), probably a kettle lug fragment, found at the top of the charcoal layer. The discreteness of the stratigraphy within this feature, with little mixing upward of the charcoal into the cobble level, suggests a short-term use of the hearth.

Feature 3 was another pit feature, probably a garbage pit, located on the western side of the area excavation. About a meter long, it was marked by a dark brown soil stain reaching a maximum depth of 22 cm below the surface. The feature produced two small iron fragments as well as cord-wrapped stick pottery, flakes and both calcined and uncalcined bone. The total of 900 bone fragments from the feature (836 calcined and 64 uncalcined) include those from most of the species identified from the site as a whole.

Figure 10: The Southern Half of Feature 2 Under Excavation in 1997.

SITE 138.4 INTERPRETATION AND SUMMARY

Dating of the Contact Component

The most important component at 138.4 is an early historic native occupation characterized by a variety of European trade goods. Given the small size of this site and the distribution of discrete features, we believe that the contact period component represents a single occupation by a small number of people. Unfortunately, few of the European goods recovered from the site are useful for precise dating. The copper kettle fragments bear some similarities to late 16th century specimens from Nova Scotia, including the presence of birchbark-like markings. However, the thinner walls and absence of spiral hammering are characteristics that Whitehead (1993:73) suggests are more typical of kettles post-dating 1600, as is the presence of significant quantities of brass. Additionally, it is quite possible that kettles and kettle fragments were curated for long periods of time, or even occasionally scavenged from earlier burials.

As noted earlier, the glass trade beads from the site are of long-lived types. They as well as the iron artifacts, the knives, nails and axe, would fit anywhere within the late 16th or 17th centuries.

The two decorated knife pommels are a common form on 16th century table knives from a

number of European countries, including England, Germany and the Netherlands (e.g., Singleton 1973: Plate Ia; Moore 1999:106; Ruempol and van Dongen 1991:143). Again, knives such as these may have very long manufacture and use lives.

At present the most useful artifact for dating the contact component is the nearly complete pipe bowl. Belly bowl pipes were common throughout the 17th century, but typically they had flat heels at the base of the bowl. It was not until toward the end of their span that spurs appeared on belly bowl pipes. Faulkner and Faulkner (1987:169) cite Atkinson and Oswald (1969) in assigning a span of 1660 to 1680 for similar London spurred belly bowls, and this time period seems reasonable for the contact period occupation at site 138.4.

Cultural Components

Thus far we have treated the late Ceramic material from the site as a separate component, and indeed it seems unlikely that use of traditional lithic tools and cord-wrapped stick ceramics survived into the second half of the 17th century. However, there are a few lines of evidence that at least suggest the possibility that the traditional "prehistoric" material was used at the same time as the European trade goods.

First, there are few clear European-derived analogs for functional types represented in the late Ceramic assemblage. There is no European pottery, and Petersen and Sanger (1991:157-160) have documented a number of cases of native pottery use well into the 17th century in New England. Aside from the single musket ball, there are no projectile weapons other than the stone notched points. We know from a number of sources (e.g., Josselyn 1988) that Maine Indians were still using the bow and arrow and lances in the mid-to-late 17th century. These are normally described as tipped with metal points, but of course the European chroniclers are generally describing Indians either in close contact with Europeans or at war. It is less clear what a back country hunter might have been using to bag a moose.

Second, there are no clear differences in the spatial distribution of traditional native material and European-derived goods. Both are present in pit features 1 and 3. Looking at the plot of cultural material found in situ within the main excavation area (see Figure 2), both European-derived and native artifacts show the same, fairly distinctive distribution pattern.

None of the evidence for contemporaneity between traditional and European trade artifacts from this site is conclusive. It does suggest, however, that we should keep an open mind about the late retention of traditional tools until more contact period native sites away from the main centers of European settlement and trade have been investigated.

The Nature of the Contact Period Component

Several inferences can be made concerning the nature of the contact period occupation. That this is a native rather than Euro-American occupation is indicated by a number of lines of evidence, including the small number of Europeans in the region at the time, the character of the faunal assemblage including lack of domestic animals, and the nature of the artifact assemblage which is dominated by secondary products from copper kettles rather than specific trade items such as beads that a European trader might have been carrying.

This appears to have been a relatively brief occupation, given the small number of individual animals represented in the faunal assemblage, and the distinctive distribution of both features and artifacts. While undoubtedly a significant portion of the original site area has been lost to erosion, it is my impression from the distribution of cultural material and features as well as the topography of the site that this was not a large settlement during the contact period occupation. It may well have been the campsite of a single family or small group for a few days to a few weeks.

Finally, the quantity of trade goods present is highly unusual, particularly for a relatively small, short-term site. Many of the contact artifacts, particularly the copper and brass stock, would have represented high value goods unlikely to have been

deliberately abandoned. The early contact period in Maine was a time of warfare, disease and disruption of traditional cultures and social ties. While we can only speculate on the events of centuries ago, it does seem likely that the site's inhabitants, perhaps native traders, may have come to an unhappy end.

ACKNOWLEDGMENTS

I would particularly like to thank the site landowners, who wish to remain anonymous, not only for their kind permission to dig up their front yard, but also for their interest in and enthusiasm toward the project. Without the 1998 volunteer crew- Robert "Ernie" Lewis, Corrine Bongiovanni, Dawn Fitch Doyle, Jacob Freedman and Stephanie Wagner- we would know much less about this site. Finally, my thanks to a number of colleagues, including Robert Bradley, Alaric Faulkner, Laurie LaBar-Kidd and Ruth Whitehead, for suggestions and information that served to relieve a little of this prehistorian's ignorance of 16th and 17th century European material culture.

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EDWARDS DAM REMOVAL
INITIAL ARCHAEOLOGICAL SURVEY RESULTS

Arthur Spiess and Leon Cranmer

INTRODUCTION

Edwards Dam, in Augusta, was removed during the summer of 1999 in an historic action to restore fish habitat on the lower Kennebec River. Archaeological survey of the dewatered margins of the former Edwards Dam impoundment was undertaken by crews from the Maine Historic Preservation Commission during July and August 1999. The primary method was to walk the newly exposed river bank collecting visible artifacts, recording location information, and inspecting eroding banks. Very limited testing was done in a few localities.

During this work we recovered about 430 prehistoric artifacts weighing approximately 55 kg from 47 prehistoric archaeological sites. This survey work located 11 new prehistoric (Native American) archaeological sites previously unknown under the former full pool elevation. We also located seven new historic or Euro-American archaeological sites, primarily mill dam and mill building related rock and wood structures.

None of the newly discovered Native American archaeological sites that had been located below the pool level (formerly underwater) meet standards of National Register of Historic Places eligibility, primarily because of extensive erosion and winnowing and displacement of smaller artifacts and specimens. We did not find the riverbank site reported in the 1890s to have preserved prehistoric "wigwam" pits or foundations. None of the newly discovered prehistoric sites requires intensive archaeological data recovery or testing.

One previously known prehistoric archaeological site, 38.56, yielded a substantial collection of stone material that had been eroded into the river and dropped at the base of the erosion scarp. This material includes Late Archaic artifacts, the oldest that have been recovered from the project area. Our ability to inspect the fully exposed erosion scarp of this site from the former river indicates that substantial information may be lost as this erosion scarp stabilizes over the next few years, but further testing is planned.

Three of the newly discovered historic archaeological sites are wooden mill dams that were exposed as tributary steams cut down through Edwards silt, where the streams had entered the former impoundment. These wooden mill dams are not known in detail from historic maps or other sources, and they appear to be well preserved. Testing of one or more of these sites is planned. They could, in fact, represent a rare survival of early 19th century wooden mill structures.

PROJECT BACKGROUND

Edwards Dam was removed in a two-step process in July and August, 1999, to return the Kennebec River from Augusta to Winslow to a free-flowing stream. This dam removal was the culmination of decades of legal consideration of the future and best use of the dam, beginning with a FERC hydroelectric relicensing process in the late 1980s. This relicensing work, of course, included archaeological Phase I and Phase II survey to identify National Register eligible archaeological sites around the margins of the impoundment, and to consider management options for those sites that were threatened with erosion (Will 1991, 1995). No archaeological mitigation plan was ever finalized for the Edwards impoundment under the FERC relicensing process, because by 1998 the State of Maine had acquired the legal rights and financial ability to remove the dam.

We were then faced with planning for removal of an impoundment that was causing erosion to several National Register eligible sites, but the act of removal of the dam and impoundment would create a more immediate problem of exposure of archaeological material and sites that had been

underwater for a century, possible looting, and possible rapid localized erosion and bank restabilization.

Beginning in the spring of 1998 the Maine Historic Preservation Commission and Maine State Planning Office consulted on the necessary archaeological work that would be concurrent with dam removal and follow dam removal. This planning resulted in a Memorandum of Understanding between MHPC and SPO, signed in May 1999, identifying a multi-step process with many contingencies for archaeological survey and, if necessary, archaeological mitigation. The document also identified a source of funds and tentative schedule for the work. Implementation of the MOU and necessary contingencies would guarantee no adverse effect to National Register archaeological sites from the dam removal action.

This is a report on the implementation of the first stage of the work: the initial survey of the former riverbanks as they were exposed by dropping water during July and August 1999.

Several sources of information were available concerning the landforms we would find below the pool level once the water started to drop, and what the potential was for archaeological resources. The oldest resource is a map drawn by Lieutenants Ward and Cooper, based on a survey of the river between Augusta and Waterville in 1822. The map is relatively accurate at the scale of 4 inches to the mile, and clearly shows islands and falls in the river and abutting river flats (Figure 1). It is, however, more useful for showing structures that were present or absent at the time (see the section on historic background below).

In June of 1974, Edwards Dam had been breeched by a flood, and water levels had dropped 10 feet or more at the dam, exposing inundated shoreline around the impoundment. Lew Flagg, Department of Marine Resources, had taken slides of portions of the impoundment at the time. We are indebted to Lew and Tom Squires of DMR for the loan of those slides and copies of the 1822 survey maps.

Richard Will of ARC, Inc., the archaeological contractor for the Edwards Dam relicensing studies, informed me that during 1990 (?) water level had been dropped about 7 feet behind the dam for a short period of repair work on the dam. The archaeological crew had taken the opportunity to walk much of the exposed shoreline, noticing and recording concentrations of fire-cracked rock. This seven foot drawdown did not expose any intact, seemingly significant archaeological sites, however.

Recently the USGS had prepared bathymetric maps of the impoundment bottom to aid studies of sediment volume and location, and projected onto these maps possible shorelines after dam removal at various river flows. We are indebted to Robert Lent of USGS for the loan of a set of these maps, upon which we transferred correlation with USGS topo maps, and marked extensive areas of low slope as "high priority" for archaeological fieldwork at the time the dam was breeched (Figure 2).

All of this information, and the information summarized in the following sections concerning historic and archaeological resources, was used to develop a scope and field plan for archaeological survey of priority areas to check first as the water dropped, followed by more extensive walk-over survey.

Anticipated Discoveries Based on Historical Data

There is evidence from before the construction of the Edwards Dam of the presence of Native American campsites along the riverbank on land forms that are now submerged by the impoundment. Specifically, in a manuscript written about 1892 Willoughby (1980:27) states that "Mr. H. H. Snell of Riverside [circa 1890] could distinctly remember the circular forms in the earth where the Indian wigwams once stood on the interval on the east bank of the Kennebec river near Five Mile Island." "Interval" here probably means "intervale," the alluvial riverbank. This location may be the village visited by Father Druillettes in 1646.

A review of documentary sources found records of three possible historic archaeological sites that might need attention during dam removal and draining the impoundment (Cranmer 1998).

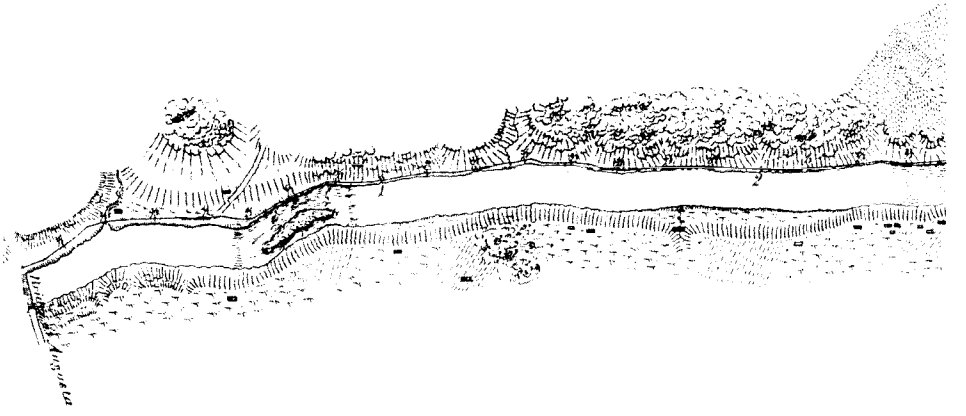

Figure 1. Section of the 1822 map by Lts. Ward and Cooper showing the future location of Edwards Dam across the rips and island at Augusta.

Two of these sites are Jesuit missions: a chapel built for Druillettes in 1646-7, and a possible later mission of about 1725-50. The first sawmill in the Augusta area, built about 1769 is the third site. All three of these sites may be below the elevation of the existing dam pool

Previous Archaeological Survey

Phase I (reconnaissance) and Phase II (site NR eligibility determination) studies were completed for the Edwards Dam (Augusta Hydroelectric Project, FERC 2389) relicensing in the early 1990s (Will 1991, 1995). This survey work had focused on the eroding margins of the existing impoundment. Approximately 40 prehistoric archaeological sites were located during this survey work. One prehistoric site (38.53) was judged to be eligible for listing in the National Register of Historic Places and actively eroding, based on the relicensing work. One site (37.50) exhibited a fire hearth or feature exposed in a collapsing bank but permission to excavate on the site was refused, at the time, by the landowner. No historic (Euro-American) archaeological sites were identified during relicensing survey that appeared to be eligible for listing in the National Register of Historic Places.

In the summer of 1998 the Maine Historic Preservation Commission completed a Phase I survey for the Maine Department of Transportation along several alternatives for a new river crossing (bridge) located north of Edwards Dam. Our archaeological survey work along the river banks in two locations added substantially to the information found by the previous Edwards Dam surveys (Cranmer 1999). For example, we found that sites 37.40 and 37.49 extended along the river bank 50 or more meters longer than detected by the Edwards Dam survey. In addition, we discovered a new site (37.54) extending along >100 m of riverbank.

National Register Eligible Sites Known Prior to Dam Removal

Before the Dam removal, five sites located on the banks of the impoundment were known to be or likely to be National Register eligible: 38.53, 37.50, 37.40, 37.49, and 37.54. These sites

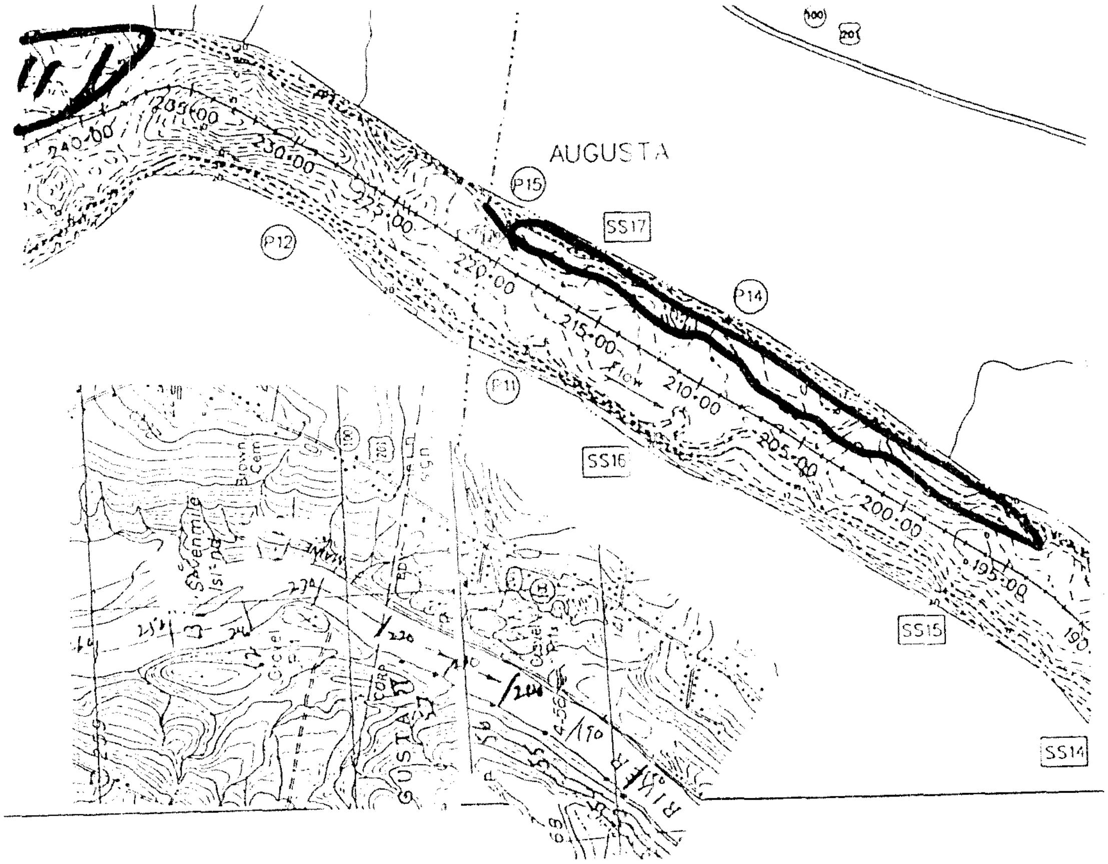

Figure 2. Bathymetric map of the river, and an inset map from the same area from the USGS topographic map, just downstream from Five Mile Island.

exhibited eroding banks along the impoundment shoreline which we presumed would be unstable for some time after the pool was dewatered. In the sections below we summarize what is known about these five sites to provide perspective on what other sites might have been like before they were substantially eroded over the last century. As mentioned, further work at some or all of these five sites will be reported in future years.

Site 38.53

Site 38.53 is located on the west side of the impoundment south of Black Brook (Figure 3). It is situated on and behind a levee crest of the modern-day Kennebec River floodplain. Nine buried soil horizons extending to a depth of at least 230 cm below surface were documented during Phase II testing (Will 1995:46). Ten features (mostly fire hearths) were encountered in two Phase II block excavations, and two were radiocarbon dated about 3400 B.P. This age, and the associated rhyolite biface thinning flakes, indicate a Susquehanna tradition cultural affiliation. Carbonized plant remains and calcined bone were recovered from many of the features.

Erosion is severe along the front edge of the site. Thirty square meters of data recovery excavation, or 10% of the site area, are recommended as mitigation (Phase III archaeology). In addition, bank stabilization might be applied after data recovery.

Site 37.50

Site 37.50 is located on the east side of the

Figure 3. The newly exposed riverbank in front of site 38.53, looking south. East bank of the river, July 7, 1999.

impoundment approximately 1½ km north of the outlet of Riggs Brook. The site is located in a low, overgrown field and lies buried under approximately a meter of silt (alluvium). Phase I testing recovered stone flakes, calcined bone, undecorated ceramic sherds, and fire-cracked rocks (Will 1995:56). The cultural material was found in a dark, organic rich layer about 20 to 30 cm thick at 80 cm depth. The cultural horizon had partially slumped down onto the river bottom during 1991. In 1993 the landowner refused permission for Phase II testing.

Sites 37.40, 37.49, and 37.54

In the summer of 1998, a Maine Historic Preservation Commission crew completed more Phase I archaeological testing in two location along about 300 meters of shoreline that had been lightly tested during Edwards Dam relicensing studies. That survey had been designed to provide an overview of a very large impoundment. (The MHPC work was focused on relatively smaller transportation corridors.) Both sites contain Ceramic period material buried in river alluvium (Cranmer 1999). In addition, we discovered a new site (37.54) that is also eroding and that contains Ceramic period material and features buried in river alluvium. Moreover, site 37.54 contains a light scatter of 17th century European material, and therefore the site may be near the location of a reported Jesuit mission.

FIELDWORK NARRATIVE

Methods

During the course of the 1999 Edwards Dam removal survey, the vast majority of the new shoreline of the river was checked at least once from a location about 100 meters upstream from Edwards dam upstream to the Sidney/Waterville town line. The vast majority of the shoreline survey was accomplished on foot, but about 20% of the shoreline was observed close-in from a canoe and

Figure 4. Exploring the railroad-related historic trash scatter in Vassalboro, July 1, 1999, early afternoon.

considered not sufficiently attractive to prehistoric settlement to require foot survey. Many stretches of shoreline were checked twice by walkover survey, once after initial removal of a section of the dam and a second time after final removal of the dam and water drop to its lowest level in a century.

Survey began in the few days before the dam breach was made, first from a boat kindly piloted by a volunteer from another state agency, and then on the ground in a search for the easiest points of foot access to both the east and west riverbanks. (There are remarkably few points of easy access, and much of the foot survey on the east bank involved walking long distances along the railroad tracks to access specific stretches of riverbank.)

The dam was breeched on July 1, 1999 early in the morning. We began our foot survey of the river bank at 9 A.M. (Figure 4). The pool level was down about 2' from full pool because of dry weather and open dam floodgates, and it dropped 3" in the first hour or two after dam breech. During much of the first day many crew members felt themselves obligated to pick up live fresh water mussels that had been marooned high and dry and throw them back into the water. We realized that other teams assembled specifically for this purpose were at work, and that we could not easily recognize the common from rare mussels, but we could not help ourselves. After a few days any mussels left were obviously dead.

The first round of survey continued through July 8, 1999. During the course of this work we learned that dam removal would be completed in mid-August, so we repeated our walkover survey of major stretches of riverbank from August 16 through August 31, 1999. This two-part survey increased survey coverage intensity in key areas because, on the first survey we were limited by the

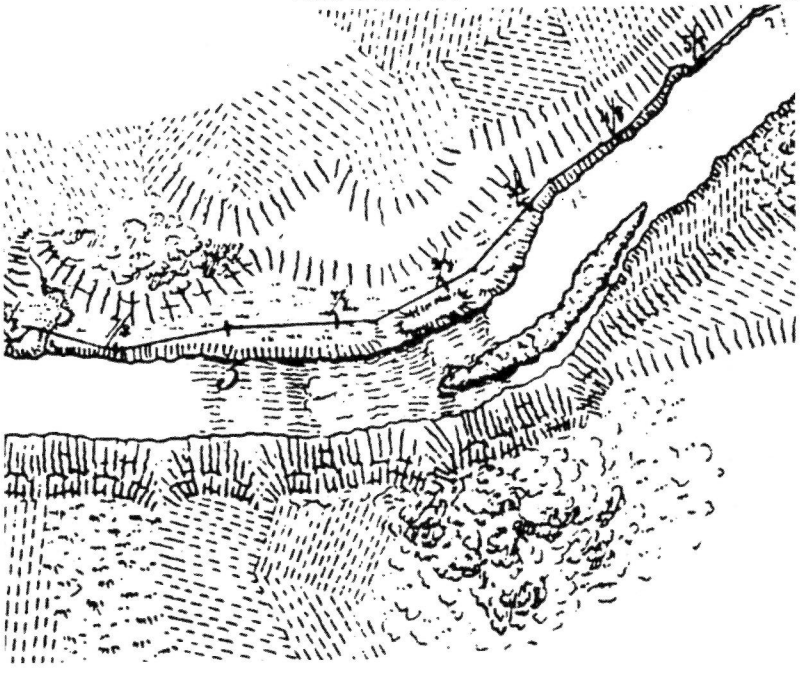

Figure 5. Five Mile Island area shown on the 1822 map by Lts. Ward and Cooper.

elevation of the pool which had dropped about half way to the natural river level. On the second round of survey, we concentrated on the lower half of the riverbank elevation that had been exposed, and examined large exposed flats around Five Mile Island (a.k.a. Sevenmile Island).

We walked shoreline in teams of two or three, with a copy of the USGS topographic map with known archaeological sites located on it, and maps of the river bathymetry developed by the USGS. With this information we attributed artifacts found eroded on the river bank to known sites, or noted new sites where artifacts were found in a new location. For much of the work we used motorized canoes for transportation, "leapfrogging" the canoe while a partner walkedthe riverbank. The canoe would be driven ahead a few hundred yards, tied up, and the driver got out and walked the riverbank, then switched when the canoe was brought up. Much of the walking was difficult, picking our way through saturated mud that sucked, often successfully, at rubber boots in an attempt to pull them loose. At no time did any one feel in physical danger from the mud or steep river banks dropping off into deep water, but partners kept a close eye on each other.

The field maps were marked to indicate stretches of shoreline that had been examined, brief field notes were written, and photographs taken. The photographs better document the shape and state of the newly exposed river bank than they record archaeological context, because almost all of the archaeological context was on the surface of the exposed riverbank.

Known site areas were checked for artifacts and features eroding out of the erosion scarp when there was a vertical scarp that was poorly vegetated. That erosion exposure had now become accessible by walking right up to face of scarp from a riverbank that could be easily traversed on foot.

The Five Mile Island Area Survey

In this section we focus on survey results and observations around Five Mile Island, in part because the observations lead to the conclusion that *water levels in the new Kennebec River, after*

Figure 6. Log boom crib structures near the south end of Five Mile Island.

Edwards Dam removal, are lower than they had ever been prior to dam construction.

Five Mile Island was first mapped in detail by Lieutenants Ward and Cooper in 1822. Their map (Figure 5) clearly shows an island just upstream from a rips or rapids at 5¼ miles upstream from Augusta. (Note the "5" and fractions of miles along the west bank in the figure). The island has since been mislabeled as "Sevenmile Island" on the current USGS topographic map (see Figure 2). The 1822 survey clearly shows a narrow channel of water to the east of the island. A steep river bank forms the east side of the narrow channel opposite the southerly end of the island, while a piece of low, flat ground forms the east side of the narrow channel opposite the northerly end of the island.

The Five Mile Island vicinity is the locus of prehistoric archaeological sites numbers 38.4, 38.61, and 38.63 on the Island itself. It is also the focus of several lines of log boom crib structures built of chinked logs filled with rock. These structures anchored log boom chains and directed logs away from the shallows around the island and down the main channel. When the impoundment was dewatered in August, these structures became quite impressive, exposed in some cases to their bases (Figure 6).

When we first visited the area on July 2, 1999, we approached along the river bank from the south, walking along the relatively steep slope of the bank exposed at "half" water level. The crew subsequently returned on August 17 after the impoundment had been dropped to its low-flow "natural" river level. Again we approached the area along the east riverbank from the south. The rips had reappeared in the river, marked by a group of log boom cribs beginning about ½ km (¼ mile) downstream from the downstream tip of Five Mile Island. Opposite the extreme south end of Five Mile Island, near a log boom crib, we picked up a glass liquor bottle and a stoneware jug marked "Bangor," presumably related to the log-driving industry activity in the area during the 19th century. We proceeded north to walk extensive cobble-armored mud flats and sandy areas between Five Mile Island and the former (late 20th century) river

Figure 7. Northern end of Five Mile Island showing exposed sand and log booms, August 17, 1999.

bank. To the north of Five Mile Island, log boom cribs were sitting on dry sandy ground (Figure 7) and in shallow water.

None of this exposed, flat ground around Five Mile Island contained any evidence of prehistoric activity. (We did pick up a few pieces eroded from site 38.63 on the northwest shoreline of the Island itself). However, based on the 1822 map, we had expected the low, flat, presumably alluvial riverbank opposite the north end of Five Mile Island to have attracted Native American settlement. I consider the soil exposure around Five Mile Island on August 17th to have been excellent, and by then our crew had become adept at spotting evidence of prehistoric occupation in the form of fire-cracked rock or Kineo rhyolite flakes, often widely scattered and disguised in river mud. The absence of Native American material on the exposed river bottom east of Five Mile Island is real. There never was Native American habitation there.

Comparison of the 1822 map and the modern USGS 7.5 minute map provides some facts that may indicate why there was no evidence of Native American habilitation on the flats around the island in August, 1999. First, the existing Five Mile Island (or Sevenmile Island) is a small remnant of its former self. In 1822, the island was long and narrow, extending for ¼ mile, with a slight bend at its midpoint (see Figure 5). The downstream end of the island was *within* the upstream end of the rips or falls at this location. The "bend" in the middle of the island is no longer there because *the whole downstream half of the island as mapped in 1822 had been eroded by 1999.* Moreover, there has been substantial erosion of the east bank of the river east of the island. Today the flats east of the island are about 150 m wide while they were much narrower in 1822. That channel east of the island must have been shallow, swampy and unsuitable for canoe travel much of the year, hence, not an attractive place for Native American settlement. Thus, this was *not* the location of a major village along the riverbank, and thus not the spot mentioned by Willoughby (1980:27).

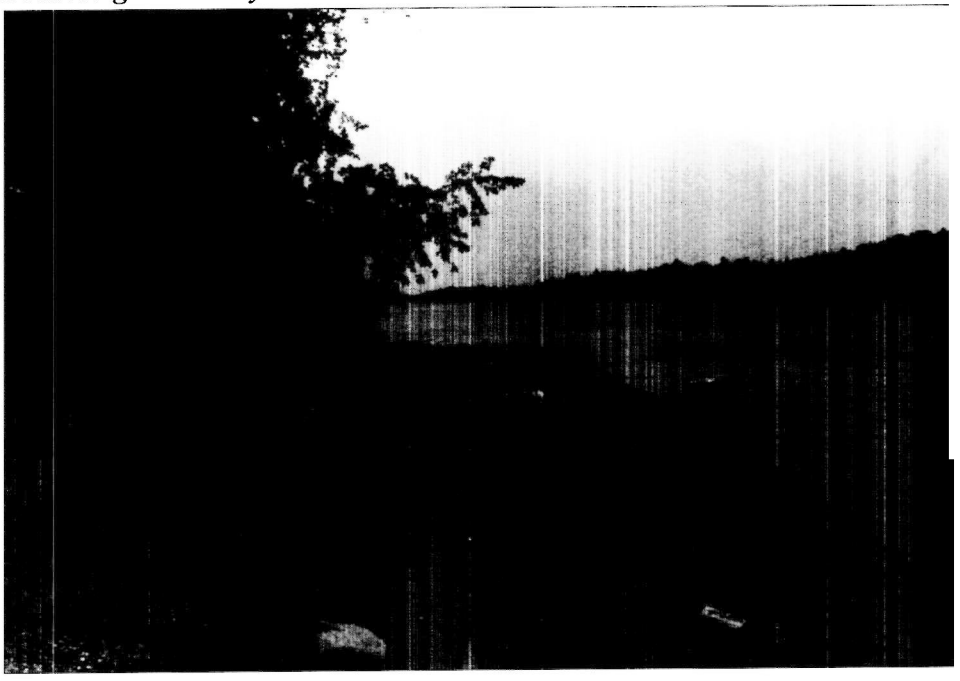

Figure 8. Initial archaeological survey, afternoon of July 1, 1999.

The 1822 map was made during the summer, a period of generally low flow in the Kennebec River. It showed a water-filled channel east of Five Mile Island. Flow in the Kennebec River on August 17, 1999 was exceptionally low, but the extent of dry land east of the island was striking. One hypothesis to explain this difference is that erosion from the adjacent riverbank and island redeposited material and filled in the channel or filled in the upstream inlet to the east channel around the log boom cribs. However, the exposed channel bottom east of the island was mostly armored with cobble and boulder lag, indicating substantial flow and removal of fine sediment from the channel. (There is some sand built up around the log boom cribs north of the island.) An alternative hypothesis is that *the removal of Edwards Dam dropped the low-flow river level below the elevation of low-flow river level in 1822.* In part Edwards Dam was anchored to ledge or an exposed island in the middle of the Kennebec River. During one of the episodes or construction of reconstruction of the dam, that ledge was partially removed. When Edwards Dam was removed in 1999, the bedrock control of the river level at the dam location was *lower* than it had been before dam construction. Thus, the river level at low flow post 1999 is now lower than it was at low flow in 1822.

NEW SITE INFORMATION

In this section we provide a description of a few of the new archaeological sites located by the survey, and a brief comment on the status of existing archaeological sites that were visited. All of the historic sites discussed are new. The prehistoric sites contain both old and newly discovered sites and we present them in site number order.

Historic Archaeology

A total of seven new historic archaeological sites were identified along the Kennebec River during the initial archaeological survey conducted by the MHPC fieldcrew after the Edwards Dam was removed (Figure 8). The sites are described below.

Site **ME021-016** is the remains of a dam

located at the mouth of Riggs Brook on the east side of the river in Augusta. The site was identified late in the season when the water was at its lowest during that dry summer. Riggs Brook was where James Howard built the first saw-mill in what was then Hallowell in 1769 (North 1870:114). At least two other mills were built on Riggs Brook. An 1828 map shows several structures on the brook, one of which appears to be right at the river. There is evidence of a mill (ME021-004) upstream within 100 m of site ME021-016, in the form of notches in the rock faces along the stream bank and a millstone along the north bank of the stream. Saw and grist mills are shown at this upstream location on an 1856 county map, while the map is unreadable about what is located at the mouth of the stream. The 1879 county map also appears to show a building on this upstream spot, and nothing at the mouth of the stream. It is assumed that the dam remains at the mouth of the stream date to 1828 or before. Further testing of site ME021-016 is necessary to determine National Register eligibility.

Site **ME445-002** is located where a stream comes out onto a gravel bank along the eastern shore of the Kennebec River at Vassalboro Corner. This is the site of a trash dump. Artifacts collected consisted of mostly hard whites, stoneware, and mixed bottle glass of late 19th century age. We also found a tinned tea kettle spout. The 1856 Kennebec County map identifies a train depot here, and the 1879 county map shows several structures along the railroad tracks in this location. An 1893 topo (1913 reprint) shows only two structures remaining along the tracks. The trash dump is presumably associated with the 19th century railroad structures and is not considered eligible for listing in the National Register of Historic Places.

Site **ME445-004** is an apparent pier located along the eastern shore of the Kennebec, about 0.9 miles above Vassalboro Corner, at an area of strong rips. Located about 10 m from the east shore, this site is a 7 x 8 m platform of large and medium rocks, connected to the shore by boulders and cobbles. The 1856 Kennebec County map shows a sawmill here and the area is called Langs Mill. The mill is gone from the 1879 county map.

Site **ME445-005** is located at the mouth of Seven Mile Stream on the eastern shore of the Kennebec River in Vassalboro. This site is the remains of a dam. Very little of the dam was exposed last fall, so not much can be described (Figure 9). Saw and grist mills on Seven Mile Stream date as early as about 1766. There was also a paper mill at the mouth of the stream. The paper mill was owned by George Cox and a Mr. Talpy and burned in 1841 (Kingsbury 1892:1111) The dam may relate to mill remains about 100 m upstream from the mouth (ME445-006). This dam appears to be gone by 1879.

Site **ME445-006** is located about 100 m upstream from the mouth of Seven Mile Stream and the eastern shore of the Kennebec River in Vassalboro. The site consists of considerable wooden structural remains plus part of a metal turbine. No artifacts were recovered. There were several mills along Seven Mile Stream beginning in 1766, and it is not known at this time the dates for this site.

Site **ME393-003**, the Goff Brook Dam, is located at the mouth of Goff Brook and the western shore of the Kennebec River in Sidney. The site may be as early as 1754 when this land was first purchased for mills. Dam remains consist of a 1' dia. horizontal log with two rows of vertical boards protruding from the sediment behind it. The two rows of boards are approximately 2 m apart. Also, a flat, 1 m square possible granite foundation stone was visible. There are mill remains (ME393- 002) about 300 m upstream on the west side of Route 104, but the dam and mill remains are probably unrelated.

Site **ME393-004** is an unidentified cellar hole, located on a flat terrace above the western shore of the Kennebec River in Sidney, north of the Augusta city line. The cellar hole contains a cement chimney with a round tile core. Wire nails were present. South of the cellar is a dirt track and clearing and log-driving boom debris was present when we found the site. The site does not appear

Figure 9. Site ME 445-004 at the mouth of Sevenmile Stream, looking west, August 17, 1999. The large horizontal log in the foreground is a structural part of the dam, while the rest of the wood is debris.

on 1856 or 1879 maps, or on the 1893 or present topographic maps. The cellar hole may be the remains of an early 20th century log-drive related structure, abandoned by the late 20th century and built after 1893.

Prehistoric Archaeology

The 1999 survey work identified 11 new prehistoric (Native American) archaeological sites. In addition we visited 37 sites that had been know from prior archaeological survey. We present a frief sample of some of these reulsts here. Artifact descriptions and photos are presented later in the paper.

Site **37.40** was examined briefly by the MHPC crew during walkover survey along the newly exposed riverbank on multiple dates. A concentration of fire-cracked rock and flakes was noticed on the upper (higher elevation) portions of the newly exposed river bank. This site was originally discovered by the Edwards Dam impoundment relicensing survey, and the site was assessed as being not significant because little was found intact in the uneroded banks around the impoundment. We recovered 110 artifacts weighing 10 kg, mostly large Kineo rhyolite cores and flakes (debitage). Notably, we also recovered four fragments of Native American ceramic. They would not have survived long, exposed to water and ice, and must have eroded from the bank relatively recently. One fragment is large and retains a decorated exterior surface, thus it can be placed in a subperiod of the Ceramic period. The exterior design is large dentate rocker stamping, the sherd (37.40.8) is relatively thick and tempered with sharp sand or crushed rock. This sherd falls within Ceramic Period 3 of Petersen and Sanger (1991), dating between 1650 and 1350 B.P. The site also

yielded a large, Kineo rhyolite point tip (37.40.22), broken above the haft. This piece is asymmetrical, and one edge has been more carefully flaked than the other edge. It may be a broken hafted knife, or a broken spear. Large points of this size, shape, and workmanship could be either Late Archaic or Early Ceramic in age. A third recognizable artifact from the site is a biface preform (37.40.24), illustrating an early stage in production of a point or knife from a Kineo rhyolite river cobble. The cobble cortex is still present on one side of what is essentially a large flake driven off a large river cobble. Only one episode of flake removal along one edge was accomplished before the piece was discarded. A fourth artifact is the broken bit (sharp) end of a beautiful polished adze. The edge is still as sharp as the day it was made. It must have broken early in its "use life," before being heavily worn and resharpened. Unfortunately, the bit is not diagnostic, but it could be Archaic or Ceramic in age. We also recovered a broken adze fragment from this site.

Site **38.04** was examined first by the MHPC crew during walkover survey along the newly exposed riverbank on several dates, starting on 7/2/99. Beginning on the east bank of the river, opposite the south end of 5 Mile Island (mis-named Sevenmile Island on the USGS topographic map) is a 6 to 8' high, vertical erosion scarp cut into Holocene alluvium (sandy silt). There is scattered fire-cracked rock all along the base of the exposure. Near a small stream mouth was a concentration of fire-cracked rock, a hearth remnant dropped onto the horizontal surface at the base of the alluvial face (or perhaps exposed on top of more alluvium that was under the horizontal erosion face at base of erosion cliff). The major vertical exposure (6 to 8' scarp) is now 25 to 30 feet from the river, and two erosion benches have been cut into Edwards silt below it in the last few days. This vertical erosion face runs for 100 to 200 meters. The top of the bank is the height of the main Kennebec levee, which is obvious from the slight downwards slope to the east when one clambers on top. Undercut, and partially vegetated, this scarp will continue to slump and stabilize, losing intact archaeological deposits. Site 38.4 stops at a small stream that has cut through the levee from the east, about opposite the north end of 5 Mile Island, because there is no more material on the bank north of the stream, and the landform changes.

A check of Rick Will's (1991) Phase I Edwards report shows that site 38.4 apparently was not dramatically eroding, and that his crew did not pick up any artifacts or notice any fire-cracked rock at the site. His conclusion implies that 38.4 was intact in a stabilized alluvial landform, not eroding. Therefore, the dramatic erosion has occurred since 1991. This site should be tested to determine the intensity of occupation remaining in the intact alluvium, but that testing might wait for a couple of years to observe the start of the stabilization process of the bank.

Site **38.57** was examined first by the MHPC crew during walkover survey along the newly exposed riverbank on 7/7/99. The inland edge of the former Edwards Dam pool at this site is marked by a steep, eroding scarp of Holocene alluvium (river silt), as are many of the sites in the Edwards project area. The original Kennebec river bank, present before the construction of Edwards dam, is marked by a fairly steep surface, armored by large cobbles. A similar armored riverbank has been observed at other sites on the Kennebec River (e.g. Spiess 1993), and probably represents a stable, long-term bank configuration. In the case of site 38.57, there are 8 meters of width between the inland edge of the armored river bank and the existing erosion scarp formed by the Edwards pool. We conclude that approximately 8 meters width of Holocene alluvium eroded after the construction of Edwards dam. Still, we recovered one fire-cracked rock at the base of the erosion scarp, indicating that some site deposits may still be intact. Material eroded from upriver during the duration of the Edwards impoundment has been deposited in a 2(?) meter thick layer of dark brown organic rich silt at this site, and elsewhere. We term this material Edwards silt, and note that it lies on an unconformity over the armored river bank of the

Figure 10. Looking north to site 38.88 in middle distance, July 1, 1999.

original river where one can see the original armored river bank. Any material deposited in or on the Edwards silt must therefore have been eroded and redeposited within the last century. Approximately 25 pieces of fire-cracked rock and one biface midsection (flaked stone tool fragment) were observed on about 50 linear meters (along the river) of the Edwards silt. This material might have been derived locally from erosion of the formerly intact 8 meters width of site 38.57. We also observed a couple of felsite core fragments down in the cobble lag of the original riverbank, and they may have been dropped there by Native Americans camping on the riverbank (and not redeposited within the last 100 years). We collected two flaked stone tool fragments from 38.57. This site was originally discovered by the Edwards Dam impoundment relicensing survey, and the site was assessed as being of unknown significance because of a lack or information. Our survey work did not add appreciably to the existing information on the site, except to suggest that 8 meters of the site has been eroded away.

Site **38.88** was newly discovered during the 1999 survey (Figure 10) at the level of the former Edwards Dam pool level on 7/1/99. The site consists of a surface scatter of artifacts on a deflated river bank and in gravel lag left behind above the level of the former the Edwards pool. The bank is steeply sloped below the level of the former pool. We recovered two Kineo rhyolite flakes. The site is not significant.

PREHISTORIC ARTIFACTS RECOVERED

This section contains descriptions of the stone tools and ceramic fragments recovered during our survey work and a description of representative pieces from the Kineo rhyolite river cobble reduction (flaked stone tool making) sequence evident at most sites in the project area. We begin with an examination of stone bifaces or points and knives, then move on to ground and pecked stone

Figure 11. Moorehead phase points. Specimen 38.61.13 at left; 38.61.10 at right.

Figure 12. Specimen 38.64.3.

objects, and ceramics. The artifacts are curated in the Maine State Museum.

Bifaces

We recovered two points that are diagnostic of the Moorehead phase of the Late Archaic period (Figure 11), about 4500 to 3900 radiocarbon years old. *Specimen 38.61.13* is a narrow stemmed point made of black rhyolite. The specimen is long (5.1 cm), narrow (1.3 cm) and thick (1.1 cm), with slight shoulders and a contracting base. The base retains a remnant striking platform. This point is identical to several points from the Moorhead phase Occupation 2 at the Turner Farm (Bourque 1995:44-46). The black rhyolite of this specimen (38.61.13) contains multiple millimeter to sub-millimeter white phenocrysts. Doyle (1995:303-304) identifies a rock of similar description as Orcutt Harbor black rhyolite (OHB), in the Castine volcanic series. This material originates on the east side of Penobscot Bay, and is common in the Turner Farm collection from North Haven Island in Penobscot Bay. It could not have been carried up the Kennebec River by glacial action. Therefore, this point must document the movement of Moorehead phase people or trade from Penobscot Bay to the Kennebec drainage and up the river toward the head of tide.

Specimen 38.61.10 is a broader-bladed (3.1 cm), longer (7.6 cm, with tip missing) contracting stemmed point of Kineo rhyolite (Figure 11). It, too, is fairly thick (1.2 cm) for its width, and there is a striking platform retained on the bottom of the stem. Similar points are also found in Occupation 2 at the Turner Farm site, so this piece is also attributed to the Moorehead phase. It was likely made on the Kennebec River on a flake derived from a river cobble, given the prevalence of lithic reduction Kineo rhyolite river cobbles in the survey area. This piece has been slightly worn by tumbling in the river.

Two points can be attributed to the early portion of the Susquehanna tradition, between about 3900 and 3400 radiocarbon years ago. *Specimen 38.64.3* is broad (4.7 cm), thin (1.2 cm) for its width, and made on Kineo rhyolite. The tip has been broken off as has a portion of one lateral side (Figure 12). On the intact side, the transition from shoulder to contracting stem is formed by a gentle arc. The base is slightly convex. The intact lateral margin of the point is straight and exhibits at least one generation of sharpening retouch, although it has been slightly worn by rolling in the river. This piece may have been a hafted knife.

Specimen 38.56.27 is another contracting stemmed point attributable to the early portion of the Susquehanna tradition (Figure 13, right). It is

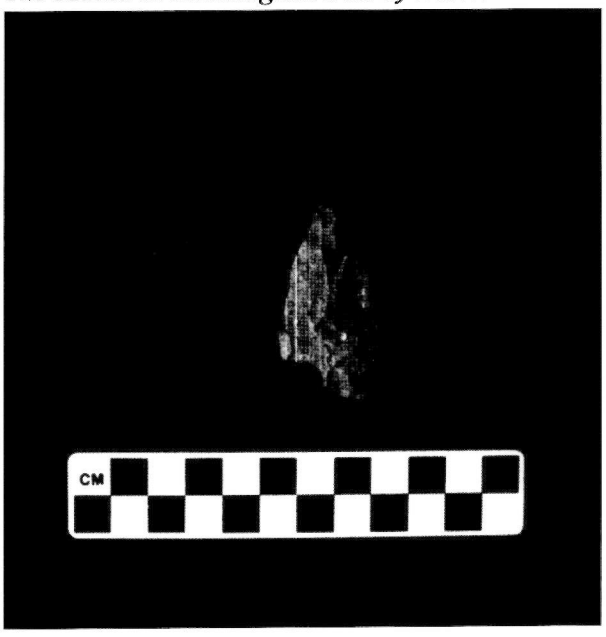

Figure 13. Susquehanna tradition point 38.56.27 at right; biface tip at left.

Figure 14. Distal biface piece, specimen 37.40.22.

broad (3.85 cm) and thin (0.95 cm) for its width, made on Kineo rhyolite. The tip has been broken. The base of the stem is straight. Again, this piece has been slightly rolled or worn in the river, but the lateral edges exhibit at least one episode of sharpening retouch.

There are three broken bifaces in the collection. *Specimen 37.40.22* (Figure 14) is the distal (tip) portion of a long point that broke just above the haft, made of Kineo rhyolite. It is relatively thick (1.1 cm) for its width (3.0 cm) at the break, and seems to be the same shape and size as 38.61.10 that was attributed to the Moorehead phase. However, the diagnostic base is missing, so we cannot attribute it to a culture with any certainty. *Specimen 38.58.2* is a biface midsection (Figure 15), broken in two places, made of Kineo rhyolite. It is relatively wide (3.7 cm) for its thickness (0.95), and so may have come from a Susquehanna tradition biface that are usually much thinner for a given width than are other Late Archaic points. *Specimen 38.56.9* is a sharp, relatively broad (1.78 cm, thickness 0.78 cm), well made point tip (Figure 13, left). This piece is made of Orcutt Harbor black rhyolite. Its relative thinness and fine workmanship argue against a Moorehead phase attribution and for either a Susquehanna tradition or Ceramic period origin.

Ground and Pecked Stone Tools

Perhaps the prize artifact of this survey is a large plummet with a knob top, pecked from a greenish metamorphic(?) rock (*specimen 37.43.2*). This piece (Figure 16) is 18 cm long, with a maximum diameter of 7.3 cm and neck diameter just below the knob of 2.85 cm. This piece weighs over 1 kg. A groove at the base of the knob seems to have been worn by a suspensory string or thong, or purposefully ground and smoothed to retain a string or thong. This piece is symmetrical and pecked all around. Well made plummets, such as this one, are attributable to the Moorehead phase. Plummets from Occupation 2 at the Turner Farm fall into two size ranges: small (20 to 420 grams) and large (610 to 1,260 grams), in a total sample of 68 (Bourque 1995:46-49). There is no overlap between these size ranges, although shapes may be similar among specimens chosen from each class.

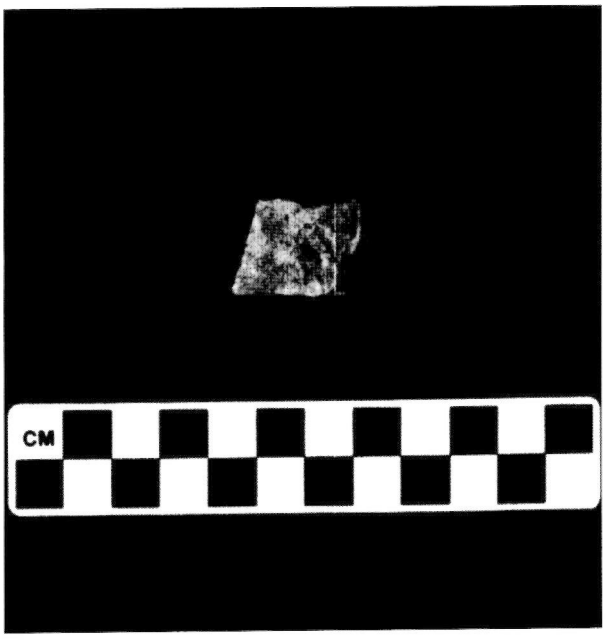

Figure 15. Biface midsection.

Figure 16. Large Moorehead phase plummet, specimen 37.43.2.

We agree with Bourque on the existence of two size classes in these implements, having not seen any in the "intermediate" size category. Bourque (1995:46) believes that the large plummets were weights for use with bone hooks, and the smaller plummets may have been used for bolas or other purposes. Finding a large plummet at a site on the Kennebec River does not rule out the use of large plummets as weights for (deep water?) hook-and-line fishing, but it seems improbable that such a rig would have been used on a flowing river. Rather, we suspect that small plummets were used as line and net weights, and the large plummets were used as anchor line weights for the ends of nets. Alternatively, the large plummets could have weighted a baited "trot" line with multiple hooks. In any case, we must account for the large versus small plummet dichotomy holding for both a marine island site and riverine site.

Specimen 38.56.24 is a slate or phyllite abrader or whetstone, manufactured by using and/or minimally shaping a long, thin, tabular piece of metamorphic bedrock that had been rolled and rounded by the river (Figure 17). One narrow edge of this piece shows extreme use polish, and a straight worn or cut groove parallel with the edge. While the piece might have been used to sharpen or shape the groove on stone gouges, the morphology of the edge more easily fits the slight concavity found on beaver incisors used as hafted knives. The hard edge of the incisors, repeatedly resharpened, may have cut a groove in the whetstone. Such whetstones could be either Archaic or Ceramic period in age, but are more common in the Archaic period.

The distal end of a stone adze blade (*specimen 37.40.15*) broke off about 8 cm from the working edge, probably due to a misdirected blow or a flaw in the gray volcanic(??) rock. The entire edge of the remaining dorsal surface of this piece has been ground and polished, while much of the remaining ventral surface has also been ground and polished. A few peck marks remain on the ventral surface. The working edge comes to approximately a 40 degree angle, and it is as sharp as the day it was last sharpened. There is no hint of a channel or

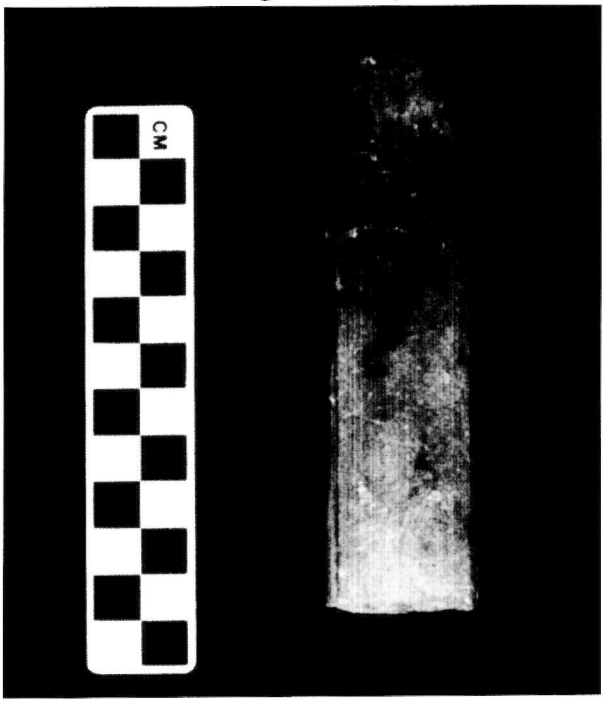

Figure 17. Slate or phyllite abrader, specimen 38.56.24.

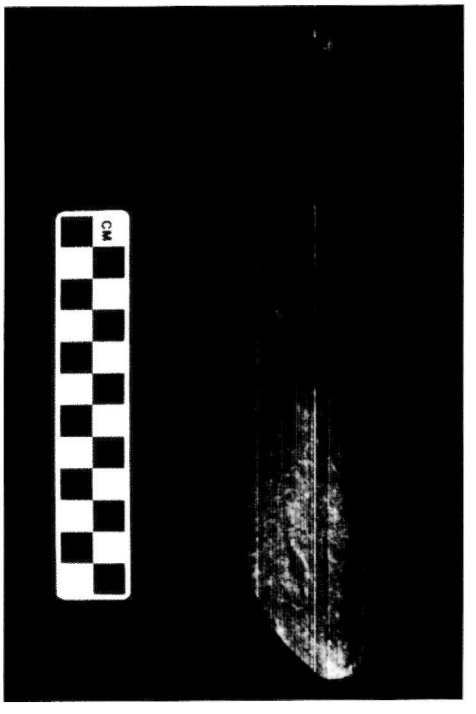

Figure 18. Battered, broken gouge.

concavity in the dorsal surface, hence the identification as an adze. This piece could be hafted today and used to chip-plane a board. Adzes can be either Archaic or Ceramic period in age, but Ceramic period ones tend to be polished and finished only on the bit, which argues for this piece being Archaic in age.

Specimen 38.61.23 is a battered, eroded, broken gouge (Figure 18). In cross section the piece is a rounded V-shape, and the poll (butt) end records small chips removed by hammer blows. These characteristics (hammered poll) indicate that this piece was used and (deep V-shape) that it was probably a gouge, since adzes and celts are not this deep in cross section and rarely seem to have been hammered. Gouges have a concave top or groove that continues to the bit, allowing the piece to chisel out pieces of wood from a concave wooden form. There is no hint of the dorsal concavity on this piece, however, indicating that it was confined to the broken distal end and could not have extended more than 1/5 of the length of the piece. Short-channel gouges, such as this one, are Late Archaic in age.

Ceramic Pieces

We recovered only a few pieces of Native American ceramic during this survey work, compared with the number of stone fragments. This is not an unexpected result, despite the documented presence of Ceramic period sites along the river bank. Native American ceramics in Maine are low-fired from local clay, and exposure to water seems to weaken and fragment them. Moreover, flowing water and ice would then have quickly ground up most of the surviving pieces.

Sherds from three ceramic vessels were recovered. *Specimen 38.19.3* is a body sherd from a medium-thick (8.5 mm) vessel tempered with crushed white quartz or coarse white quartz sand (Figure 19). The interior and exterior surfaces were smoothed before firing, but both surfaces were

Figure 19. Ceramic sherd 38.19.3.

Figure 20. Dentate rocker-stamped ceramic sherd, specimen 37.40.8.

marked with apparent grass or straw fragments in short, randomly held bunches while the surface was still wet. Based on these attributes, this vessel was probably Ceramic period 2, 3, or 4 in age (Petersen and Sanger 1991), between 2150 and 950 radiocarbon years.

Specimen 37.40.8 comes from a thick vessel (0.95 to 1.15 cm, thickening from one edge of the sherd to the other) tempered with the same crushed white quartz or quartz sand as seen in 38.19.3. The increase in thickness from one edge of the piece to the other, over a distance of 6 cm, may indicate that the piece originated toward the bottom of the vessel, where they often thicken quickly. This piece has been smoothed and scraped on the interior and exterio and then the exterior was decorated with toothed (dentate) tool applied in large rocker strokes (Figure 20). The thickness, temper and exterior design identify this piece as Ceramic period 3 in age (1650-1350 radiocarbon years B.P.).

Specimen 37.61.1 is a rim sherd, exhibiting a flat, slightly everted lip. The sherd is thick (0.95 cm) away from the rim, and it is tempered with large (up to 3 mm) pieces of crushed granite. The interior and exterior are smoothed, and the exterior is decorated with cord-wrapped stick impressions (Figure 21). The cordage used to wrap the stick has an apparent diameter of 1.2 mm, but its twist direction and number of plys (single?) cannot be determined. This piece is probably from Ceramic period 5 (950-650 B.P.).

Non-diagnostic Stone Tools

Two stone tools were recovered that are not diagnostic of a particular culture or time period, but that do provide information about activities on the banks of the Kennebec River. *Specimen 37.50.6* is a "denticulate," a large flake with a straight edge that has been retouched to produce a saw-like series of cusps and shallow scallops along the straight edge (Figure 22). This piece is made on a large (77 grams) flake of Kineo rhyolite river cobble, smooth cobble cortex being present on one small remnant surface. Thus, it was probably a casually made or impromptu tool, manufactured in a few seconds. The denticulate edge resembles that produced on a modern scalloped-edge steak knife. Tools of exactly this form (straight edge on a large cobble, with denticulate retouch) were first noticed at the Evergreens site near Solon on the Kennebec (Spiess and Hedden 1993), but no use-wear studies have

Figure 21. Cord-wrapped stick impressed rim sherd, 37.61.1.

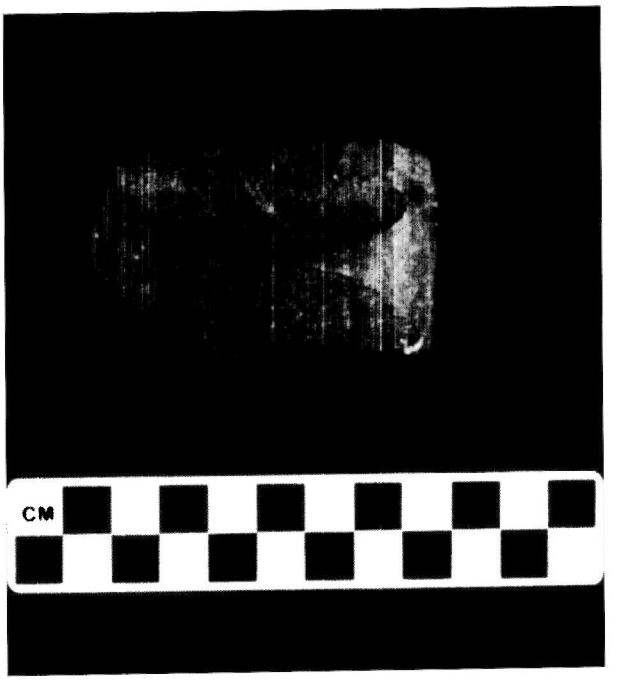

Figure 22. Flake with denticulate edge (top), 37.50.6.

been carried out to determine what material these "knives" may have been used upon.

Specimen 38.56.7 is another sort of "impromptu" or expedient tool, a wedge or *piece esquillee* (from the French for scaled piece). The piece had, at one time, been the square base of a large, biface without a stem (Figure 23). It was probably broken accidentally, then picked up and reutilized as a wedge. The opposing lateral edges, which were fairly sharp (biface edges) were the last operational part of this tool: stuck in a piece of wood or other hard material, one edge was hammered upon while the other was driven into the material being split. Characteristic use wear of opposing, large step flakes from this hammering and wedge action is present on this tool.

Lithic Reduction Sequence

The vast majority of the material we recovered was the remains of use of large Kineo rhyolite cobbles, common in the river bed and banks, as a source of raw material by Native Americans. Kineo rhyolite cobbles of perhaps ½ to 2 kilograms size were routinely battered and broken as cores for raw material. We recovered a few of the cores themselves, for example *specimen 38.80.3* weighs 1400 grams, and specimen *38.03.5,* approximately 15 x 10 cm in size weighs 880 grams (Figure 24). Approximately one-half of the specimen retains the smooth river cobble cortex. Much of the debitage we recovered were very large flakes and core fragments produced by bashing up these cores in an effort to test them for flaws and/or produce a useful preform. In terms of numbers, the most common items we recovered were large flakes of 2 to 5 cm in maximum size, produced by this early stage of lithic core reduction and subsequent stages. One of the initial products of this work was selection of a large flake of the correct size, and trimming it by unifacial or biface flaking into a recognizable preform. We recovered at least one specimen (*37.40.24*) that provides some information on the early stages of biface reduction (Figure 25).

detailed study to examine this process, but that study is beyond the scope of the present report.

CONCLUSIONS

Discussion

Diagnostic artifacts document the presence of the Moorehead phase (circa 4500 to 3900 radiocarbon years) and early portion of the Susquehanna tradition (circa 3900 to 3600) Late Archaic cultures. Ceramic period material (3000 to about 600 radiocarbon years) is also present. A couple of stone pieces demonstrate cultural ties (trade or travel) with eastern Penobscot Bay (Orcutt Harbor black rhyolite), one attributable to the Moorehead phase and one probably later in time. Although there are no stone tool fragments of banded spherulitic rhyolite (BSR, e.g., site 38.69), there are several flakes. Again, this material is found in Penobscot Bay, and demonstates trade or travel to that region of the Maine coast.

The vast majority of the material we recovered (both by count and certainly by weight) is debris from testing and using common Kineo rhyolite cobbles as a source of stone raw material. This stretch of the river (in common with portions of the Kennebec further upriver and the Sebasticook River) served as a quarry source of Kineo rhyolite that had originally been transported southward as glacial debris. The behavior of using this stretch of the river, the lithic reduction sequence that resulted, and the influence that such a dispersed "quarry" source had on settlement patterns deserves further thought and study.

One pattern that we observed in this survey repeatedly (when we were lucky) is exemplified by sites 37.57 through 37.61. This pattern consisted of a light scatter of fire-cracked rock and other occupation debris along a stretch of 200 m or more of shoreline. The fire-cracked rock and any associated stone tools or ceramics were often clumped in small areas, leaving a score (or more) of meters of sterile ground between concentrations. In contrast, other sites are marked by areas of 50 to 100 meters or more in length of intense fire-cracked rock and stone working debris, marking sites of intensive utilization.

We can call the stretches of shoreline, such as that one containing sites 37.57 through 37.61, *intermittent* in occupation distribution. Archaeological testing results have documented this intermittent settlement pattern intact, in uneroded riverbank levee, in two project areas. One such project, of course, is the Edwards Dam relicensing study (Will 1991), coupled with more recent work on some of the same area by MHPC for a new bridge crossing (ongoing). The other project was survey for the Donald Carter Bridge on the east bank of the Kennebec River in Winslow, accomplished by MHPC in the late 1980s (Spiess et al 1990). We located long stretches of riverbank containing concentrated (5 to 10 m diameter) "patches" of cultural material separated by 10 to 50 meters of sterile river alluvium. Moreover, the "patches" of cultural material occurred seemingly at random in the top two meters or so of river alluvium. Thus, the settlement pattern for portions of the lower Kennebec River bank must have included small family groups camping by themselves for a season or short period of time, and this pattern lasted for several millennia as the river silt accumulated.

This dispersed, small campsite settlement pattern contrasts dramatically with intensive, focused reuse of areas marked by much more intensive archaeological material. Each type of settlement pattern produces different types of sites and each has benefits for archaeological study. Intensive settlement in one area produces a dense archaeological site with opportunities for recovery of much material in a small area and possible stratification of one occupation over another. Without care, however, archaeological assemblages can be mixed. The dispersed settlement pattern produces small occupations with physical separation. Given that the small occupations can be found, however, complete excavation will present total archaeological recovery of an limited time and season of occupation, without much chance for mixture.

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