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Test Excavation of the Walker Site, Presumpscot River Drainage, Falmouth

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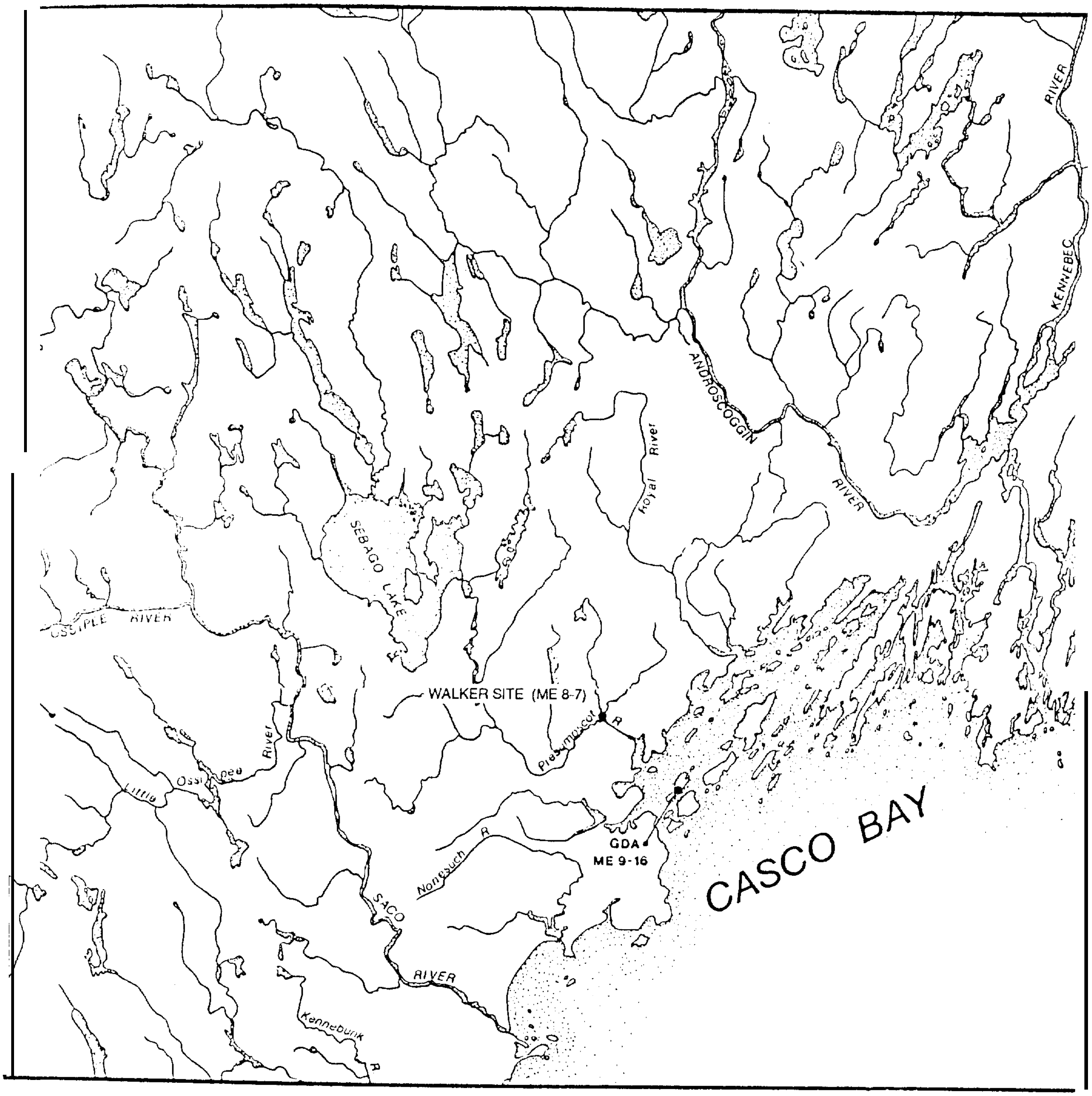
Archaeological survey and test excavations at the Dan Walker Site (Maine Archaeological Survey 8.7) were undertaken in the spring and summer, 1988 for the Maine Historic Preservation Commission and Portland Water District. A right-of-way purchased several decades ago by the Portland Water District crosses the Dan Walker site. New water pipeline construction to service the needs of an expanding population in the Portland area (Figure 1) was scheduled for mid-summer, 1988. Water line construction within pre-existing rights-of-way generally does not require state environmental permits in Maine. Under Federal law, only an Army Corps of Engineers permit would be needed for the Presumpscot River crossing by the pipeline, and then only if some aspect of the environment would be adversely effected. Therefore, the Maine Historic Preservation Commission and Portland Water District reached agreement on a jointly funded intensive test excavation of the pipeline route across the Dan Walker site. The principal goal of the research was the delineation of previously recorded prehistoric deposits, assessment of the quantity, quality and integrity of the Dan Walker site, and determination with reasonable assurance that undisturbed deposits would not be adversely impacted by pipeline construction.

The Dan Walker archaeological site was reported to the Maine State Museum in 1976. Richard Doyle, Jr. and Richard Doyle, Sr. subsequently kept the Maine Historic Preservation Commission informed concerning the potential significance of the site. Both Doyles had surface collected the site, and examined subsurface soil characteristics using a narrow-diameter punch auger, with Mr. Walker's permission. The Dan Walker property exhibited three known surfacial clusters of prehistoric material, all three of known temporal affiliation. One, a concentration yielding Late Archaic (Susquehanna Tradition) material on an upper river terrace, lay within the pipeline corridor. The other two clusters, of Middle and Late Ceramic age respectively, lay outside the construction route.

The intensive test area on the Walker site was defined as all areas within the lower terrace of the Presumpscot River (Area A) and the adjacent upper terrace (Area B) that were subject to effect by the construction of the water pipeline along the corridor defined by the Portland Water District. The site areas are located north of the confluence of the Presumpscot and Piscataqua Rivers at an elevation ranging from ca. 12 m (40 ft.) to 18 m (60 ft.) above mean sea level (Figure 2). The areas are currently in use by Dan Walker for agricultural production.

Prior to the fieldwork, the author met with Richard Doyle, Jr. He was able to spec-

Figure 1. Location of the Walker site in the Presumpscot River drainage of southwestern Maine. The location of the Great Diamond Island site (see table 5) also shown.



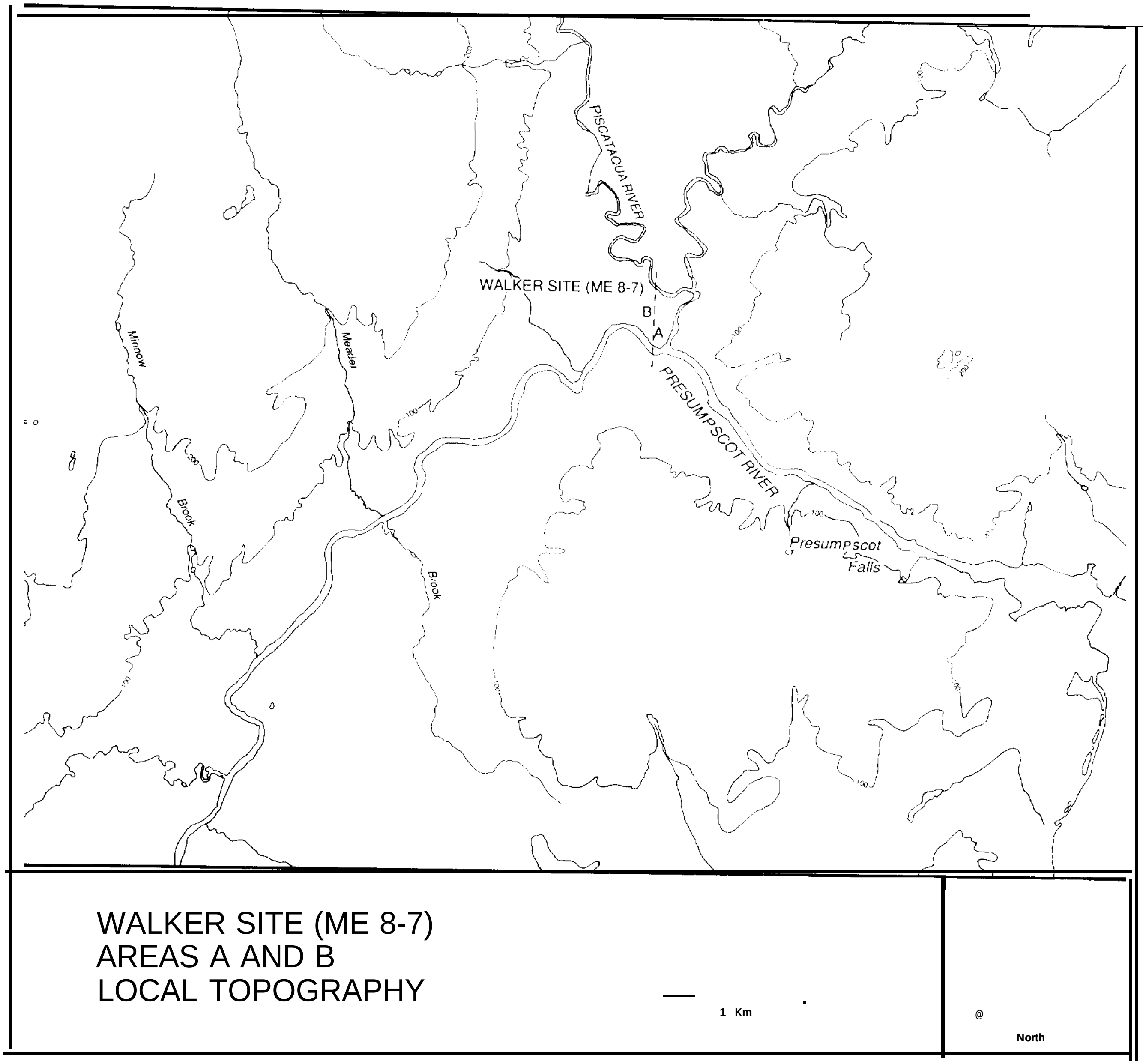


Figure 2. Location of areas A and B at the Walker site, confluence of the Piscataqua and Presumpscot Rivers. One hundred foot contour intervals also shown.

ify an area producing materials along the pipeline corridor, and graciously provided his field notes and artifact collections for analysis.

During the course of survey the project area, which had been plowed, was intensively examined through walk-over examination and the excavation of 25 test pits within two sampling transects (Figure 3). The test pits were excavated to varying culturally sterile or water-logged depths. This initial survey effort relocated the one previously

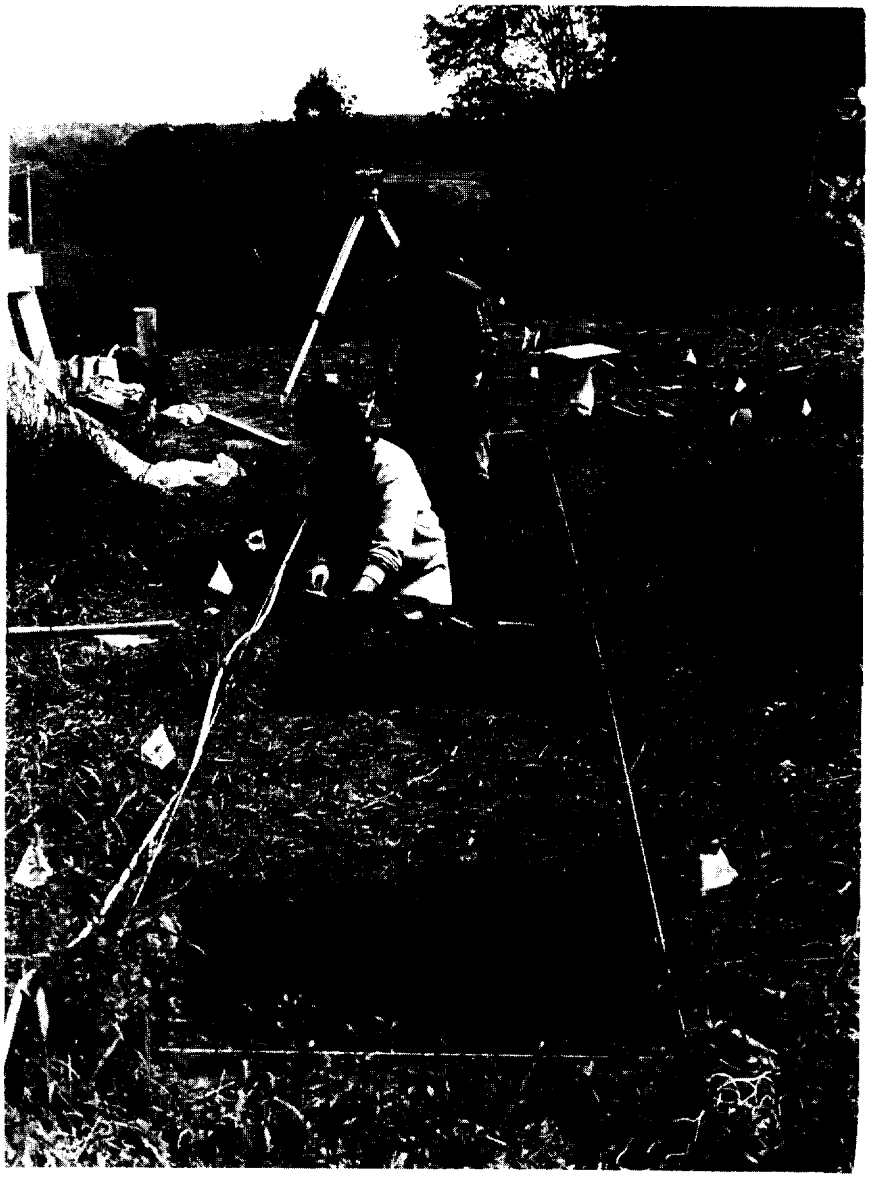


Figure 3. Beginning excavation in testpits 9 though 13 on the upper terrace (Area B). Lower river terrace in the background.

recorded concentration of Archaic materials on the bluff or upper terrace. Initial testing efforts were supplemented on the upper terrace with six additional units of excavation. Ultimately, a total of 31 test units within two transects were hand excavated during the research on the Walker site.

The field crew consisted of Nathan Hamilton (Principal Investigator), and John Mosher and Thomas Bennett (field supervisors), all paid personnel. The volunteer crew consisted of Charles Hensley, Thomas Dupent, Robert Florentin, Hitomi Hongo, Cathy Calgano, Liz Trautman, Donna Benjamin, Kathy Remmel, Sally McClain, and Alta Bruce. Matthew Tomaso compiled the catalog of prehistoric and historic period cultural remains and soil samples in the laboratory. Richard Doyle, Sr., of Portland and Richard Doyle, Jr. of Cumberland provided background data on the site and the collection of artifacts recovered from the site. Special thanks are extended to Dan Walker and family who granted permission to conduct the archaeological survey and excavations.

CULTURAL SETTING

Archaeological research has been conducted over an 80 year period within the Sebago Lake/Presumpscot River drainage. The history of research for the study area has been summarized elsewhere (Hamilton 1985; Hamilton et. al., n.d.).

The first common use of the Sebago Lake/Presumpscot River region came during the late Paleoindian Period, ca. 10,000 B. P., recorded at three site locations around Sebago Lake (Doyle, et. al. 1985; Hamilton, et. al., n.d.). Earlier fluted point Paleoindian habitation and kill sites have been reported in mountainous northern Maine (Gramly 1982) and interior western Maine (Spiess and Wilson 1987), but has only recently been found in the Sebago Lake Region (site 12.24). Paleoindian material has also been reported from Freeport, Maine, 15 km to the north of the Walker site (Spiess and Wilson 1987:193).

Cultural evidence of subsequent Archaic Period occupations varies and apparently increases significantly through time in the local lowland and coastal region. Archaic populations are typically thought of as hunter-fisher-gatherer groups who utilized a broad and diverse spectrum of food and raw material resources in evolving Holocene environments. Sites attributable to the Early Archaic Period, ca. 9,000-7,500 B.P. are known from several locations principally aggregated at the Sebago Lake Basin outlet (Hamilton et. al., n.d.). No sites of the Early Archaic Period have been identified in either Casco Bay or along the Presumpscot River. Sites of this early period are found in southwestern Maine (Spiess et. al. 1983; Yesner et. al. 1983) and river areas of central Maine, most notably the Piscataquis River and drainage (Petersen et. al. 1986).

Middle Archaic sites, ca. 7,500-6,000 B. P., are much more common than the Early Archaic sites in the Presumpscot Drainage, southwestern Maine and the Lakes region of southeastern New Hampshire. At least eleven Middle Archaic site locations, defined on the basis of diagnostic Stark, Neville, and Merrimack projectile point forms, are known from Sebago Lake. The number of sites and relative abundance of associated flaked stone tools seemingly represent a significant increase in prehistoric human populations in the region. These Middle Archaic sites are focussed at the outlets of rivers and streams entering Sebago Lake and may correlate with the exploitation of anadromous fish. Yesner et. al. (1983) have suggested that Middle Archaic populations developed a subsistence pattern based on intensive exploitation of anadromous fish, turtles and aquatic mammals and likely a “landlocked” salmon population.

In a review of Late Paleoindian through Middle Archaic sites in western Maine, the Walker site was attributed to the Middle Archaic Period on the basis of one contracting stem biface manufactured from argillite (Spiess et. al. 1983). It is now thought likely that the specimen is Late Archaic Susquehanna Tradition (circa 3,900-3,500 B. P.) in age. *(Editor’s Note: Spiess concurs.)*

Late Archaic sites, ca. 6,000-2,800 B.P. are still more common around Sebago Lake and in the broad region, probably representing a variety of sub-regional complexes (i.e., Borstel 1982; Bourque 1976; Hamilton 1985; Doyle, et. al. 1986; Moorehead 1922; Sanger et. al. 1977; Snow 1969; Spiess 1984). Cultural remains representing the Laurentian Tradition, Moorehead Phase of the Maritime Archaic Tradition, Small-stemmed (Squibnocket) Tradition, and Susquehanna Tradition are all found in the Sebago Lake region (cf. Hamilton 1985; Yesner, et. al. 1984:318). The available evidence suggests continued population growth during the Late Archaic in the southwestern Maine seaboard lowlands and southeastern New Hampshire lakes region. In Casco Bay, Small-stemmed Tradition and Susquehanna Tradition are present at the base of three shell middens sites: Great Diamond site A (site 9.16), Great Moshier site A (site 14.18) and the Basin site (site 15.20).

The most recent era of prehistory, the Ceramic Period is likewise divisible into three periods: Early, ca. 2,800-2,100 B. P.; Middle, ca. 2,100-1,000 B, P.; and Late, ca. 1,000-300 B.P. Numerous sites are present for all these periods along the shores of Sebago Lake and Casco Bay and in the broad region (Hamilton 1985; Petersen n.d.). However, the Walker site represents one of only six Woodland (Ceramic) Period sites recorded along the Presumpscot River.

The Ceramic Period, ca. 3,000 to 350 B.P. (800 B.C. to A.D. 1550), witnessed some degree of social evolution, possible group amalgamation and incipient differentiation between coastal and interior populations, as well as the introduction of cultigens into local economies (Snow 1984). Cultigens probably had a significant affect on aboriginal subsistence in the Pejepscot drainage. The use of cultigens by aboriginal populations was well documented by Champlain and Purchas in areas of the Saco River and Presumpscot River at the time of contact (e.g., Bourne 1906; Snow 1980).

Interestingly, the archaeological record from various sites on Casco Bay islands does not confirm the usage of the cultigens in the prehistoric Ceramic Period (Hamilton 1985). It seems possible that the seasonal occupation nature (late winter/early spring) of the excavated Casco Bay sites may contribute to a bias in our understanding of the nature of prehistoric agriculture in coastal southwestern Maine. Horticultural/agricultural settlements may well have been situated in the lower river valleys and lakes regions at this time, although archaeological data available from the river valleys in southwestern Maine is poorly known. Recent dates on features with cultigens indicate their presence in riverine settings in the Upper Connecticut River at ca. 1200 B.P. at the Hunter site, Clairmont, New Hampshire. The Early Fall site on the Saco River in Maine provided a date on cultigens of approximately 460 B.P. (J. Petersen, 1989, personal communication; Cowie 1988).

European settlement on the Presumpscot River did not begin until ca. A.D. 1730s. Gorham was settled in A.D. 1736 by Captain John Phinney and his son Edmund from Barnstable, Massachusetts, and Windham was initially occupied in A.D. 1737 by Thomas Chute from Falmouth (McLellan 1903; Jones 1949). However, Indian troubles began in 1739, when Thomas Westbrook of Saccarappa (Westbrook) journeyed up the Presumpscot and constructed a dam. Once completed, the dam effectively cut off the anadromous salmon run from the Indians' fishing areas along the falls (Jones 1949:25; McLellan 1903:35; Yesner et. al, 1983). Six years of Indian wars broke out after a petition by Chief Polin to the governor of Massachusetts failed, and the local Native Americans were ultimately wiped out (Dole 1974:23; Jones 1949:25).

Upon settlement, land was cleared for farming and for lumbering. In Standish, as early as A.D. 1763, 200 acres of land were offered to Ebenezer Shaw on the condition that he construct and operate a saw mill. Several more mills were built along the Presumpscot River in later years, but the Pleasant River in Windham and the Northwest River in East Sebago, also had mills by A.D. 1789. With the completion of the Cumberland and Oxford Canal in 1830, Harrison, at the tip of Long Lake, and Portland, at the mouth of the Fore River, a distance of about 40 miles, were connected, thereby opening up the region to economic development (Jones 1949:52-62). By the 1870s, most of the Sebago Lake shoreline and the Presumpscot River banks had been cleared of valuable pine and hardwood, and the replacement industry for the region became recreation.

SURVEY AND TESTING METHODS

The archaeological survey was designed to examine the area of known prehistoric occupations within the proposed Portland Water District pipeline corridor (Figure 4), as well as testing areas (with significant potential for undisturbed aboriginal remains) adjacent to the river's confluence. The excavation and data recovery procedures employed in the Walker site study have been developed and refined for northeastern archaeology during the Casco Bay/Sebago Lake Archaeological Research, conducted by the University of Southern Maine (Hamilton 1985; Hamilton et. al. n.d.) and also utilized

Figure 4. Testing within the pipeline corridor, Area A, on the lower river terrace. The river-bank is in the middle distance.

during recent work on the Pejepscot site, Androscoggin River (Hamilton et. al. 1986).

Prior to excavation, the site, pipeline corridor and surrounding area were examined through a rigorous systematic walk-over of the land. The plowed fields had been turned over and were generally unplanted when we conducted the walk-over examination. Surface visibility was excellent. Although Dan Walker requested that subsurface testing be *confined* to the pipeline corridor, we walked all adjacent open fields. Subsurface test units were established along a base line between yellow metal posts on the center line of the Water District's surveyed pipeline route. A plan view of the transects and excavation units was compiled using a transit and metric tape (Figures 5 and 6). The baseline was oriented generally north-south and is divided into Areas A (lower) and B (upper) by the slope from the upper to lower terrace.

Designation of all excavation units was by sequential test pit number, and later the southwest corner of each unit. All horizontal coordinates were reckoned relative to the unit walls and the ground surface at the southwest corner stake. The combina-

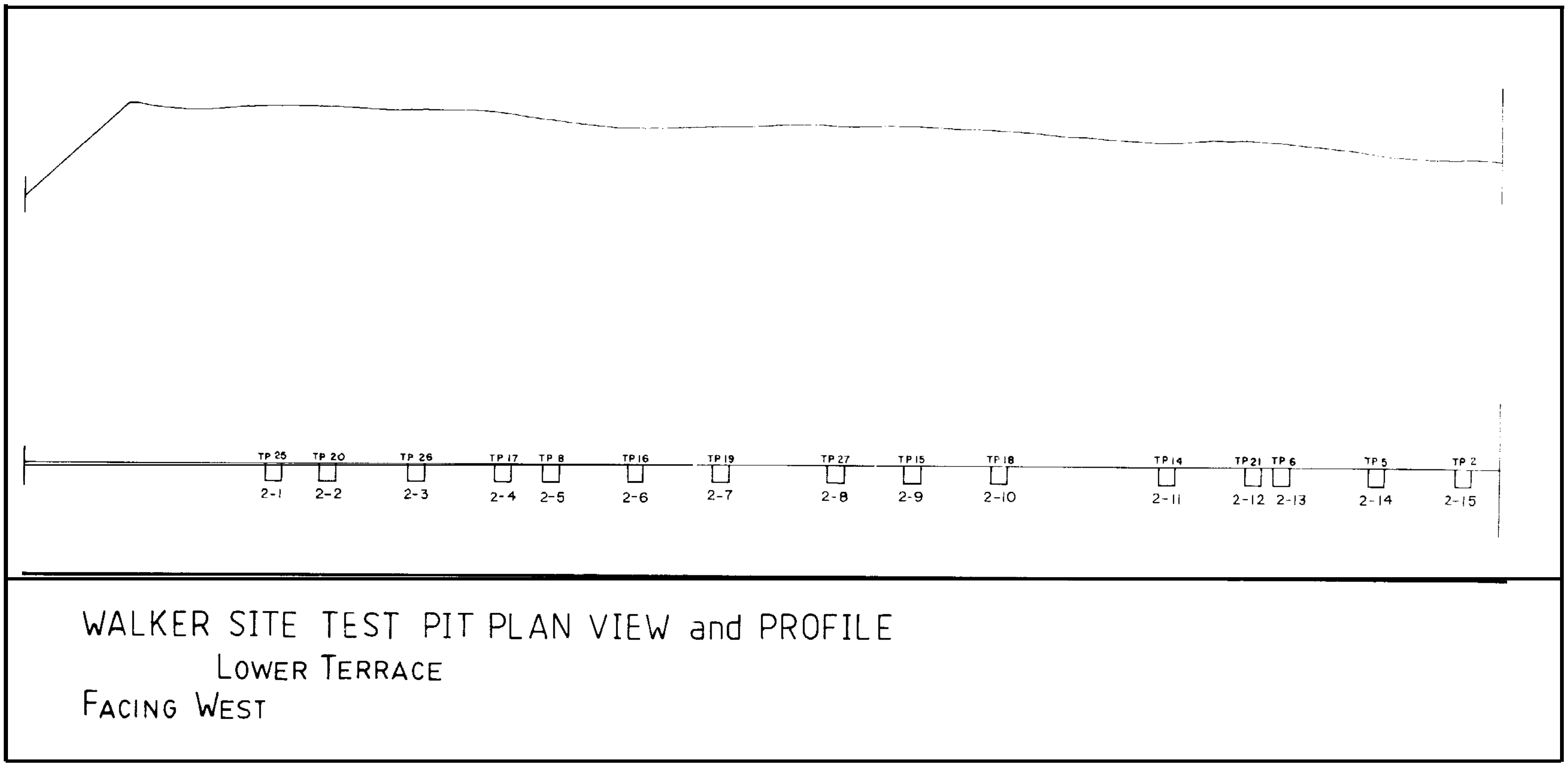


Figure 5. The lower terrace, area A, showing spacing and numbering of testpits along the pipeline centerline (below), and a profile of the land surface (upper line). Riverbank at left.

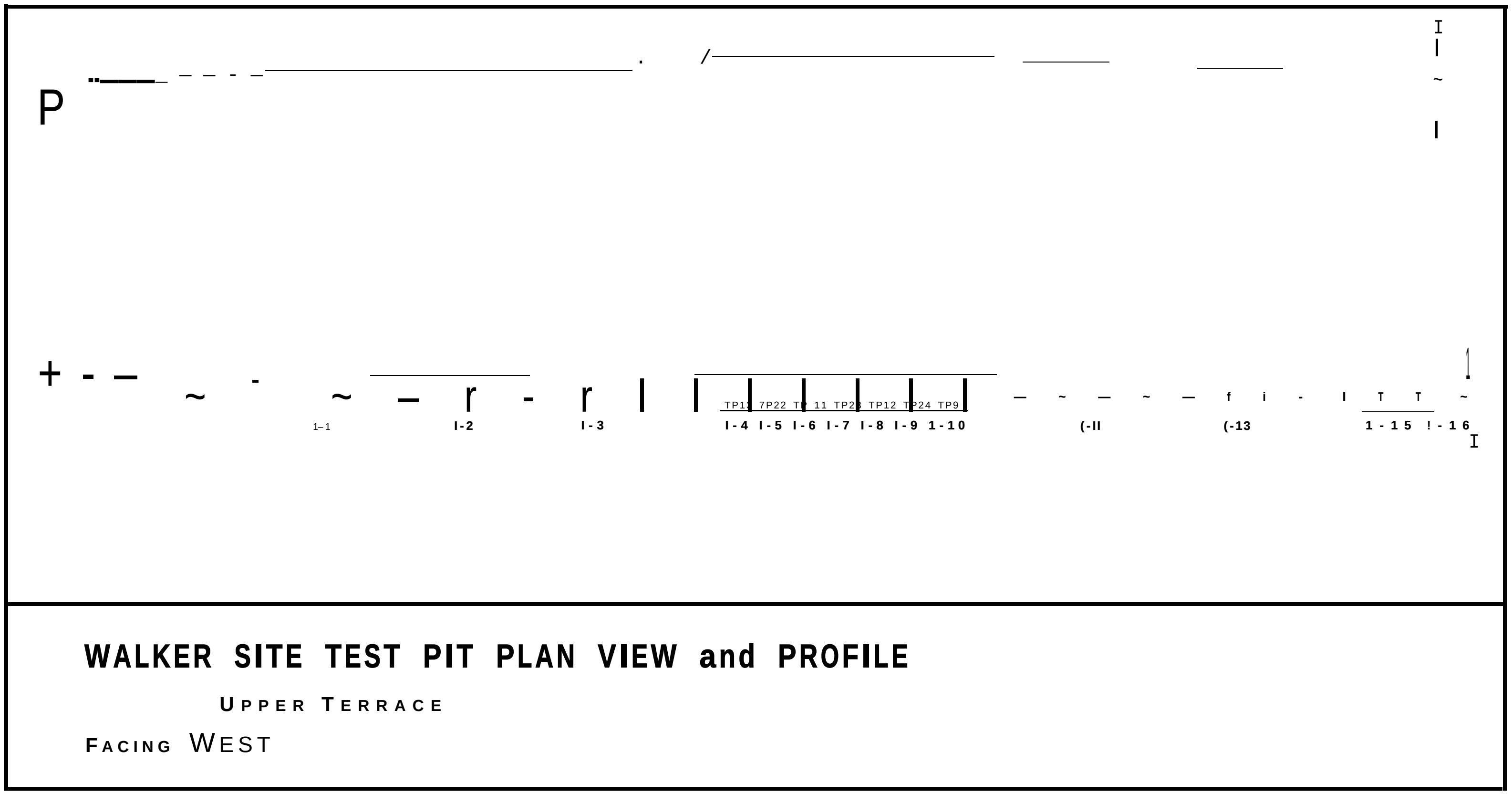


Figure 6. Area B showing spacing and numbering of testpits along the pipeline centerline (below) and a profile of the land surface (above).

tion of the surface elevation and unit boundaries provided Cartesian coordinates for all cultural remains encountered and recovered during excavation. These unit coordinates were tied to several established datum points and the pipeline corridor markers.

All of the excavation was carried out using hand tools. In most cases, a combination of hand trowel and sharpened flat shovel was employed. Excavation was conducted in both 10 cm levels below ground surface and natural stratigraphic levels defined on the basis of texture, composition and color variation criteria. All backdirt from each unit was dry-processed through 6 mm hardware cloth screening attached to 1 m X 60 cm shaker screens. Much of the sediment on the upper terrace was dry for screening, but the lower terrace retained much water, especially on the north end.

All artifactual materials and other samples recovered during the Walker site survey and excavation were processed in the Archaeology Laboratory, 317 Bailey Hall at the University of Southern Maine. All photographs, field notes and maps are curated in the Archaeology Laboratory, 317 Bailey Hall and cultural remains are curated in the Museum of Anthropology, 319 Bailey Hall at the University of Southern Maine.

During the 18 working days of April through June and portions of September at the Walker site a total of 62 person days were expended in surface collection and test unit excavation. A total of ca. 14 cubic meters of fill was excavated from 31 test units and produced 494 cultural remains. Additionally, 18 select soil samples of 200 gm plus each were taken for sediment studies and stratigraphic description.

Mr. Richard Doyle of Cumberland, Maine, loaned the University all artifactual remains and field notes from his work at the Walker site. The collection includes 119 lithic, 61 ceramic and 43 faunal specimens.

SITE LOCATION AND DESCRIPTION

The Walker site (8.7) is a thinly scattered, multi-component, habitation site. Two temporally discreet prehistoric occupations are present within the pipeline route, Late Archaic Susquehanna Tradition (ea. 3,900-3,500 B. P.) on the upper terrace and Middle Ceramic period (ea. 2,100-1,000 B. P.) on the lower terrace. The site is located ca. 8 km north of Portland, Cumberland County, Maine and ca. 2 km southeast of West Falmouth Corner. The archaeological site is located on both the upper and lower terrace of the land west of the confluence of the Piscataqua and Presumpscot Rivers and directly in the proposed Portland Water District pipeline corridor.

The site is situated on a narrow crest, ca. 45 m in width on the upper terrace. The cluster of artifacts recovered by Doyle suggested an area less than 12-15 square meters in extent. On the lower terrace, the prehistoric artifact concentration occurs ca. 82 m east of the baseline of the water pipe corridor. The component on the upper terrace is ca. 10-14 m above the present river, while the lower terrace ranges from 2.5 m to 5.5 m above the present river. This is an area of Suffield silt loam and Pedenk fine sandy loam soil (Hedstrom 1974).

The Walker site is named for the landowners, Mr. and Mrs. Dan Walker, who have been resident/farmers on the land since the 1950s, Several prehistoric artifacts have been plowed up during the farming activities and recovered by Dan Walker. Both colluvial erosion on the upper terrace and fluvial erosion and frequent inundation on the lower terrace, as well as plowing and forest clearance, have contributed to site disturbance and make estimations of the two prehistoric activity areas difficult.

The prehistoric remains on the lower terrace (area A) were generally scattered along the eastern margin of the plowed field and along the north side of the lower Piscataqua River. One prehistoric activity area was identified at the western margin of the plowed field on the upper terrace (Area B) and produced four stemmed bifaces and associated flaked stone remains. Two additional concentrations of cultural remains were defined by Richard Doyle, Jr., one a cluster of distinctive chert secondary flakes (FS-1) and the other cluster, sherds of the base, body and rim of a dentate-impressed ceramic vessel (FS-2).

SOILS AND STRATIGRAPHY

Since only the excavations associated with pipeline construction produced prehistoric cultural remains in Area B, our discus-

Figure 7. Testing underway in Area B. The plowzone is easily visible on the righthand wall of the excavation squares.

sion will focus on the soils in the test units and trench excavation in that area. The stratigraphy consists of seven readily defined strata (Figure 7) which represent a normal podsol soil that has been plowed. The strata are labeled and described in descending order from upper-most to deepest.

Stratum 1: Horizontally, Stratum A is continuous across the excavated portion of the bluff top. Vertically, on the bluff top it occurs at a depth of 0 to ca. 20 cm from the surface. Stratum 1 is a dark brown loam plow zone (Ap). The sediments are sand and silt mixed with plowed organics. At the top is a thin sod cover and the bottom is generally an abrupt, horizontal truncation of Stratum 2. No distinguishable plow furrows are present at the A/B interface.

Stratum 2: Horizontally, Stratum 2 is continuous across the excavated portion of Area B (Figures 16 and 17). Vertically, the stratum begins at ca. 10 to 25 cm below the surface and extends to between 40 and 65 cm below the ground surface. Stratum 2 is an orange, heavily mottled fine sand, a B_1 soil horizon. The top of the stratum is truncated by the plowzone and the bottom grades into a lighter orange sand. In the top of Stratum 2 we identified the base of a possible cultural feature (Figures 18 and 19). The probable cultural feature cannot be associated with any diagnostic cultural remains.

Stratum 3: Horizontally, Stratum 3 is continuous across the bluff top. Vertically, the stratum occurs at a depth of ca. 45 to 70 cm from the surface. Stratum 3 is light orange sand (B_2 soil horizon) and exhibits root mottling.

Stratum 4 Stratum 4 is present in Unit 1-2 and probably is continuous across all of Area B. Vertically, the stratum occurs from 63 to 65 cm below ground surface. Stratum 4 is a mottled orange and white fine sand. The upper and lower limits of the stratum are well defined. It is a transitional B_2/C soil horizon.

Stratum 5: Stratum 5 is present in Unit 1-2 and probably is continuous across Area B. Vertically, the stratum occurs from 66 to 93 cm below ground surface. Stratum 5 is a thick layer of fine white sand. The upper and lower limits of the stratum are well defined. This layer represents the C soil horizon on which the forest podsol (A and B soil layers) developed.

Stratum 6: Stratum 6 is present in Unit 1-2 and possibly is continuous across area B. Vertically, the stratum occurs from 93 to 95 cm below ground surface. Stratum 6 is a thin dense layer of coarse white sand. The sand is evenly distributed across the stratum 7 clay. Evidently it represents a separate depositional stratum, different from Stratum 5 above.

Stratum 7: Stratum 7 is a continuous layer across all of Area B. Stratum 7 is a clean clay, possibly Presumpscot Formation marine clay in origin. The color is generally grey-blue with no mottling.

CULTURAL REMAINS

A small number of aboriginal (n=15)and a moderate number of Euro-American historic (n=494) cultural remains were recovered from the Walker site survey and test excavation (Tables 1 and 2). The aboriginal sample includes 15 flakes, manufactured from rhyolite, quartz and undetermined material. With the exception of one questionable flake all of these remains were recovered from Area B, the upper terrace. The Euro-American historic sample includes 37 historic ceramics, 255 brick fragments, two buttons, 175 metal artifacts including square nails, round nails, and a bolt, as well as 16 glass specimens. The Euro-American materials are all mid-19th and 20th century in origin. Finally, seven bone and two shell samples were recovered from the test excavations.

In addition to the cultural remains recovered from the Walker site test excavations the Doyle surface collection (Table 3) was available for analysis. The Doyle surface collection consists of 11 bifaces, 5 unifaces, 97 flakes, one whetstone fragment, and 61 ceramic vessel sherds.

Aboriginal Lithics

A total of 15 lithic artifacts were recovered from the Walker site during the USM test excavations. No lithic tools and no ground stone specimens are among the sample. All of the specimens recovered by USM appear to be bifacial thinning flakes, Additional lithic specimens recovered by the Doyles are included in the inventory.

Two artifact collections are currently known from the site, Doyle's moderate collection (Figures 8 through 12) and several worked lithic specimens in the possession of Dan Walker. The specimens recovered by Dan Walker are Terminal Archaic bifaces and were obtained in the same lithic concentration as those recovered by the Doyles during the late 1970s in the vicinity of Area B of the USM tests.

Aboriginal Ceramics

A number of aboriginal ceramic sherds and fragments were recovered by the Doyles during the earlier surface collection (Figure 13). No ceramic remains were recovered from the 1988 USM testing. Of the total sample of specimens, 26 exhibit decoration and/or surface treatment. They can be divided into three vessel lots on the basis of both rim and body sherds.

The three vessels recovered by Doyle

Table 1. Distribution of prehistoric and historic cultural remains for each test unit for Area A and Area B at the Walker Site.

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AREA	UNIT	PREHIST FLAKES	HISTORIC CERAMICS	BRICK	SQUARE NAIL	ROUND NAIL	BOLTS	BUTTONS METAL	MISC.	GLASS	BONE	SHELL HISTORIC	TOTAL
A	TU2	0	1	5	1	0	0	1	17	0	0	0	25
A	TU5	0	0	7	0	0	0	0	9	0	0	0	16
A	TU6	0	0	1	0	0	0	0	0	0	0	0	1
A	TU8	1	7	13	0	0	0	0	0	1	0	0	21
A	TU14	0	0	6	5	6	0	0	6	1	2	0	26
A	TU15	0	1	5	4	0	0	0	2	0	0	0	12
A	TU16	0	1	3	1	0	0	0	0	1	0	0	6
A	TU17	0	2	2	0	0	0	0	0	0	0	0	4
A	TU18	0	1	5	0	0	0	0	18	1	1	1	27
A	TU19	0	1	4	4	0	0	0	1	1	0	0	11
A	TU20	0	2	19	3	0	0	0	0	4	0	0	28
A	TU21	0	0	5	2	0	0	0	5	1	0	0	13
A	TU25	0	0	12	2	0	0	0	23	2	1	0	40
A	TU26	0	0	0	0	0	0	0	2	0	0	0	2
A	TU27	0	1	1	1	0	0	0	4	0	0	0	7
**	Subtotal *	1	17	88	23	6	0	1	87	12	4	1	** 239
													8
8	Tu1	3	0	9	2	0	0	0	0	0	0	0	11
8	TU3	1	0	10	2	0	0	0	0	1	0	0	13
8	TU4	o	3	21	4	0	0	0	1	0	0	0	29
8	TU7	o	2	11	1	7	1	0	8	0	0	1	31
8	TU9	2	3	12	1	0	0	0	0	1	1	0	18
8	TU1O	3	1	4	2	3	0	1	6	0	0	0	17
8	TU11	1	0	4	0	0	0	0	0	0	0	0	4
8	TU12	2	2	32	4	1	0	0	0	1	0	0	40
8	TU13	o	3	12	1	1	0	0	0	0	1	0	18
B	TU22	o	2	6	0	0	0	0	4	0	0	0	12
B	TU23	1	0	13	1	0	0	0	0	0	0	0	15
B	TU24	o	4	16	4	0	0	0	0	0	1	0	25
B	TU28	o	0	6	0	0	0	0	2	0	0	0	8
B	TU29	o	0	6	1	0	0	0	0	0	0	0	7
B	TU30	1	0	5	0	0	0	0	1	1	0	0	7
B	TU31	o	0	0	0	0	0	0	0	0	0	0	0
**	Subtotal **	14	20	167	23	13	1	1	22	4	3	1	255
***	Total ***	15	37	255	46	19	1	2	109	16	7	2	494

Table 2. Distribution of prehistoric and historic cultural remains by arbitrary 10 cm Levels for all Test Units at the Walker Site

LEVEL	PREHIST FLAKES	HISTORIC CERAMICS	BRICK	SQUARE NAIL	ROUND NAIL	BOLTS	BUTTONS	MISC. METAL	GLASS	BONE	SHELL	TOTAL HISTORIC
1	5	12	62	9	8	1	1	39	7	2	1	142
2	4	15	110	16	3	0	1	32	7	3	1	188
3	6	to	79	21	8	0	0	24	1	1	0	144
0	0	0	4	0	0	0	0	14	1	0	0	20
TOTAL	15	37	255	46	19	1	2	109	16	6	2	494

include two grit-tempered, linear and rocker-dentate decorated vessels attributable to the Middle Ceramic, ca. 2,200 B. P.-1,000 B.P. One dentate vessel exhibits circular punctuations and interior surface channeling and probably dates to the later period of the Middle Ceramic. In addition, a third vessel is defined on the basis of a single body sherd which exhibits a cordage-impressed exterior. The third vessel is grit, mica and shell tempered and is attributable to the Late Ceramic, ca. 1,000 B.P.-400 B.P.

The Ceramic collection is dominated by the Middle Ceramic Period sherds. One vessel (Lot #l) consists of 51 sherds (Figure 13), many of which are co-joinable and recovered from a concentration (FS-2) in the lower field. All of the sherds recovered are some distance from the pipeline corridor.

Historic Artifacts

A moderate sample of Euro-American historic remains were recovered from the test excavation at the Walker site (Tables 1 and 2). The historic specimens were recovered in nearly all USM test units in both areas A and B. All of the historic specimens lack historical significance because they do not represent in situ deposits, and they are all of mid- to late-19th and 20th century origin.

Most of the sample of historic remains reflects a pattern of artifact redistribution from the area of the present Walker home and barns. Dan Walker indicated that much of the sample was shoveled up with manure around the barn area and spread across the plowed field of both area A and B. Most of the glass, bricks and nail sample can be tied to the 19th century Walker home and barns. No historic period materials can be associated with 17th century aboriginal occupations.

Faunal Remains

A tiny sample of calcined faunal remains were recovered from the Walker site during the USM test excavation. The sample includes both bone and shell specimens, all unidentifiable. In addition, the Doyle collection includes some 43 faunal specimens, the majority of the fauna are small fragments of calcined mammal bone. The only identifiable fauna is deer *(Odocoileus virginianus)* and has probable association with the Ceramic Period occupations. No identifiable faunal specimens are associated with the Susquehanna Tradition occupations.

CONCLUSIONS

The results of the Dan Walker site archaeological survey and testing reveal the extensive disturbance of the prehistoric components from historic period plowing. Based on the information recovered we feel that the portion of the Walker site in the pipeline corridor lacks significance and is

Table 3, Distribution of cultural remains for Area A and Area B from the Doyle collection recovered from surface collection at the Walker Site

ARTIFACT	AREA A	% OF TOTAL	AREA B	% OF TOTAL	TOTAL	% OF TOTAL
FLAKED STONE						
Biface						
Stemmed, Argillite			4	57.1	4	3.4
Triangular, Kineo Rhyolite	3	2.7			3	2.5
Triangular, Quartz	1	0.9			1	0.8
Irregular, Rhyolite	2	1.8			2	
Tip, Rhyolite	1	0.9			1	0.8
Uniface						
Chert	1	0.9			1	0.8
Rhyolite	1	0.9			1	0.8
Quartz	3	2.7			3	2.5
Flakes						
Chert or Fine Grain Rhyolite	42	37.8	1	14.3	42	36.4
Quartz	30	27.0	2	28.6	32	27.1
Kineo	3	2.7	-	-	3	2.5
Argillite	9	8.1	-	-	9	7.6
Yellow Chert (FS-1)	15	13.5	-	-	15	12.7
Sub-Total	111		7		118	
Percent of Total	94.0		6.0		100	
GROUND STONE						
Whetstone, fragment	1	100	-	-	1	100
CERAMICS						
Dentate and Punctate Impressed						
Vessel 1 Rim	6	9.8	-	-	6	9.8
Vessel 1 Body	41	67.2	-	-	41	67.2
Vessel 2 Rim .	1	1.6	-	-	1	1.6
Vessel 3 Body	1	1.6	-	-	1	1.6
Misc. Dentate Body	12	19.7	-	-	12	19.7
Sub-Total	61				61	
Percent of Total	100				100	
HISTORIC						
Slate, misc. shingle	2	33.3	1	100	3	42.8
Pipe stem	2	33.3	-	-	2	28.6
Pipe bowl with TD	2	33.3	-	-	2	28.6
Sub- Total	6	-	1	-	7	
Percent of **Total**	**85.7**		**14.3**			
FAUNA						
Marmmal, misc.	41	95.3	-	-	41	95.3
Shell (Mya arenaria)	2	4.7	-	-	2	4.7
Sub-Total	43				43	
Percent of Total		100	-			I 00

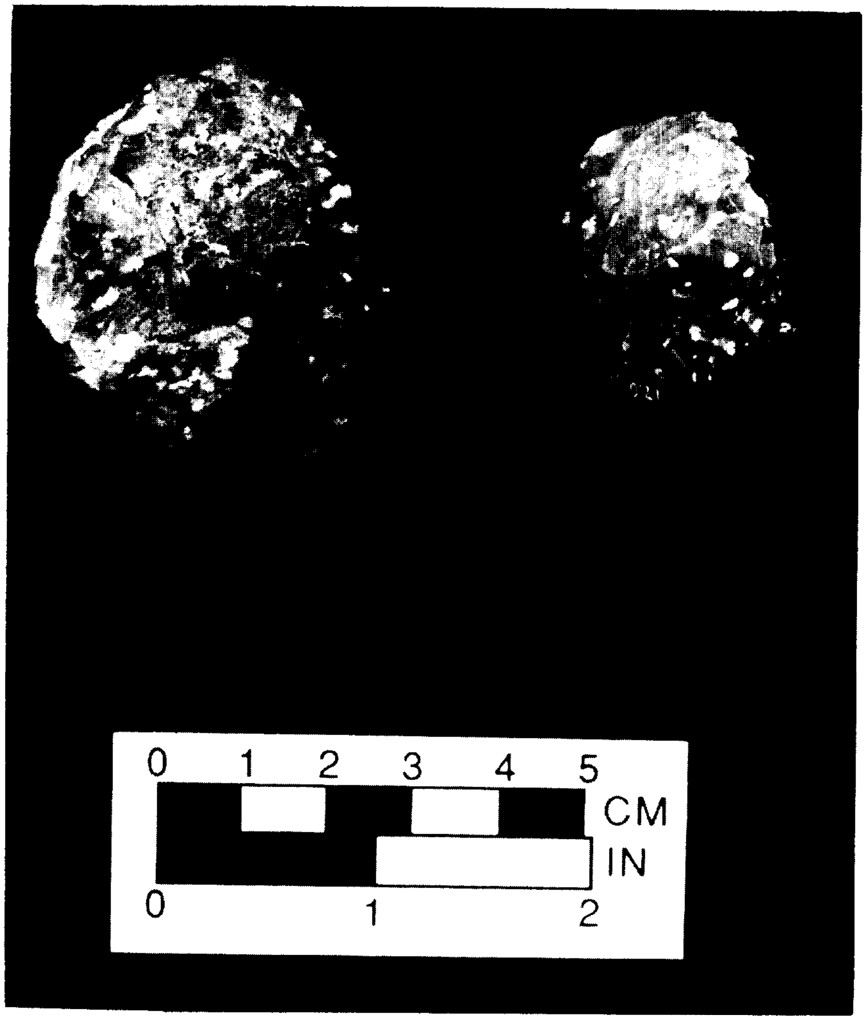


Figure 8. Felsite cores from the Doyle collection from Area A on the site.

therefore not eligible for inclusion in the National Register of Historic Places,

The Late Archaic Susquehanna Tradition material recovered by the Doyles have local correlates (Table 4) and represent a small but locally important collection. However, the remains were not in situ and thus lack significance beyond being a recovery from a single, limited locus. The Ceramic Period remains recovered by the Doyles also have numerous local correlates (Table 5). To date we do not know whether some small portion of the Dan Walker site, a limited area of the field, may provide sub-plowzone context such as features for the Ceramic period.

Figure 9. Biface fragments in the Doyle collection for Area A. of the Walker site.

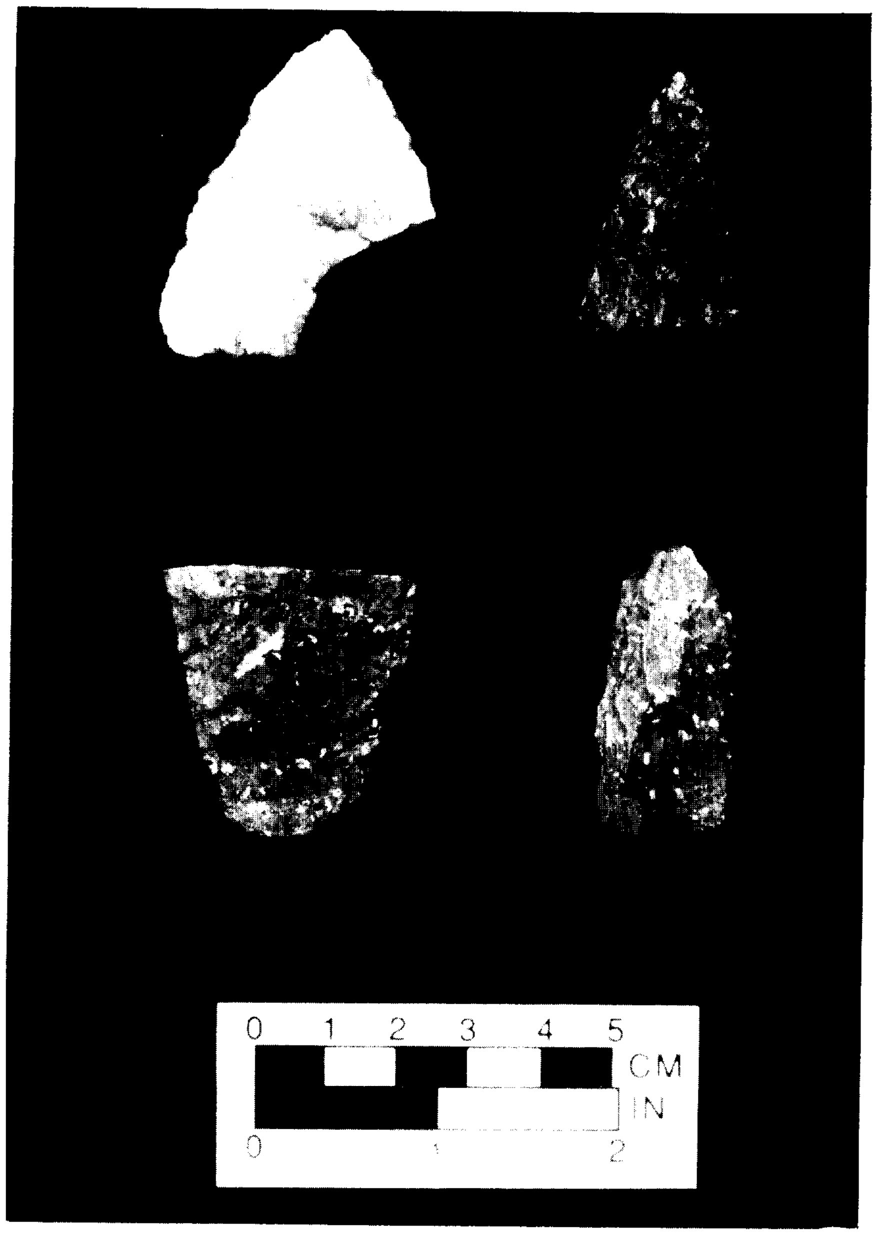


Figure 10. Unifaces (left) and quartz biface fragments (right) in the Doyle collection from Area A of the Walker site.

Figure 11. Susquehanna Tradition biface in the Doyle collection from Area B at the Walker site.

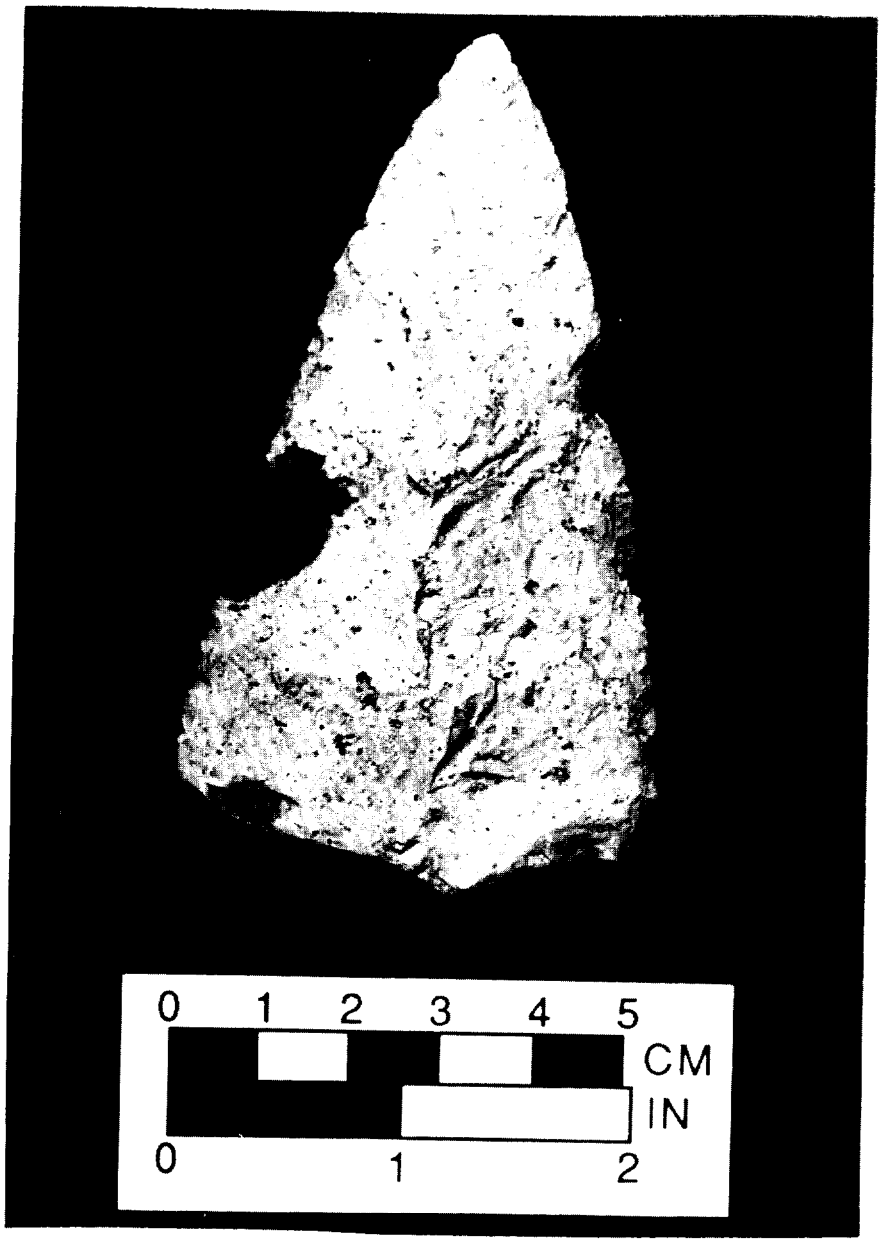
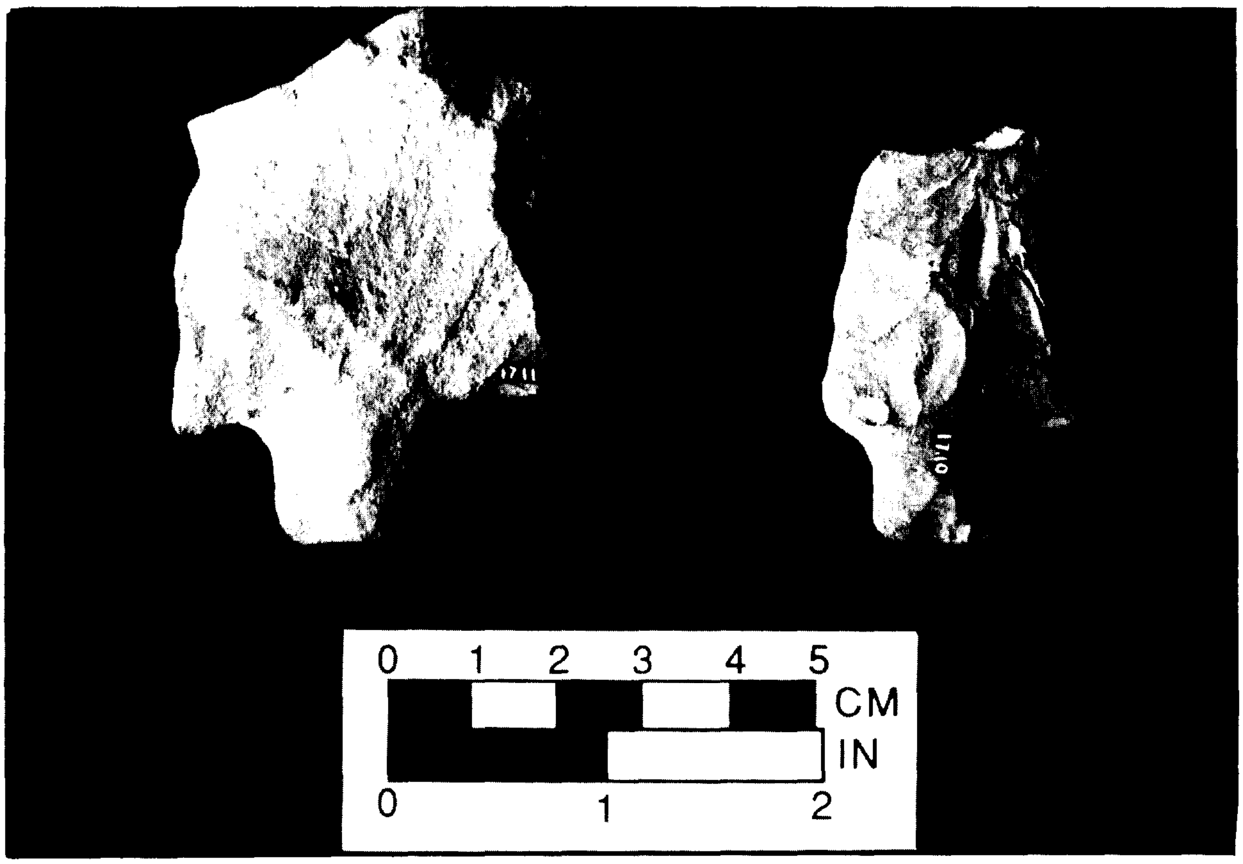


Table 4. Casco Bay, Presumpscot Drainage and Sebago Lake site correlates of the Terminal Archaic Period Occupations

NUMBER	SITE NAME	LOCATION	CULTURAL REMAINS
1.	Basin Island	Sebago Lake Outlet	Susquehanne Smell-stemmed Narrow-stemmed
2.	Great Diamond, A	Casco Bay	Small-stemmed Susquehanna
3.	Great Moshier, A	Casco Bay	Small-stemmed Susquehanna
4.	Long Point	Long Pond	Snook Kill
5.	Thoroughfare	Brandy Pond	Snook Kill
6.	Mitch's Cove	Sebago Lake	Susquehanna Narrow-stemmed

Figure 12. Two argillite Susquehanna Tradition biface bases in the Doyle collection from Area B at the Walker site.



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Archaeology at Dodge Point for the Land for Maine's Future Board

Arthur E. Spiess and Mark H. Hedden

The Land for Maine's Future Board (LMFB) was created by the Legislature to purchase parcels of land with outstanding scenic character, wildlife habitat, open space, agricultural or recreational value, or to purchase development rights or conservation easements to such lands. The Board's acquisition activities were initially funded by a $35 million bond issue passed by the voters in November 1988. A second, smaller bond issue is on the ballot for November 1990.

Archaeological significance is not a factor considered in making land purchase decisions by the LMFB. However, significant archaeological sites must be considered in developing a land management plan for each parcel after purchase. The staff of the Maine Historic Preservation Commission acts in an advisory capacity to the LMFB in developing management plans. Small amounts of LMFB money can be used to fund archaeological survey activities relevant to making management decisions.

The Dodge Point parcel, fronting the Damariscotta River in Newcastle, was one of the early acquisitions by the LMFB. This report describes an intensive archaeological survey done for the Land for Maine's Future Board under an interagency agreement between the Maine Historic Preservation Commission and LMFB. Fieldwork for this project took place over three days between June 27 and June 29,1989.

Historic archaeological fieldwork was confined to upland sections of the Dodge Point tract. An historic cellar hole was located in association with a standing outbuilding. Occupation of this complex dates between 1810 and the 20th century. It is not considered a significant archaeological site. An historic archaeological survey of the Lincoln County coastline funded by a separate MHPC grant located two brickyards and an associated quay or loading wharf on the property. No building remains, and no artifacts other than bricks were found at these sites. These sites are not considered significant.

Intensive archaeological testing at prehistoric site 16.168 recovered evidence from a small shell midden that was occupied during the Early Ceramic and Late Ceramic periods, probably during the cold season of the year. The site is considered significant, and therefore eligible for listing on the National Register of Historic Places. It is eroding and has been damaged by foot traffic to the adjacent beach. We recommend relocation of the footpath away from the site, and either construction of erosion control measures, or complete excavation of the archaeological deposit before it is destroyed. The rest of this report concerns the results of testing prehistoric site 16.168.

ENVIRONMENTAL SETTING

Site 16.168 is located at Dodge Point on the western shore of the narrow Damariscotta River estuary about 15 km north of the present estuarine "outlet" into the Gulf of Maine (Figure 1). The Damariscotta River valley is one of the smallest of a series of river drainages trending in a northeasterly direction along isoclinal bedrock folds in this section of the Maine Coast. The Damar-

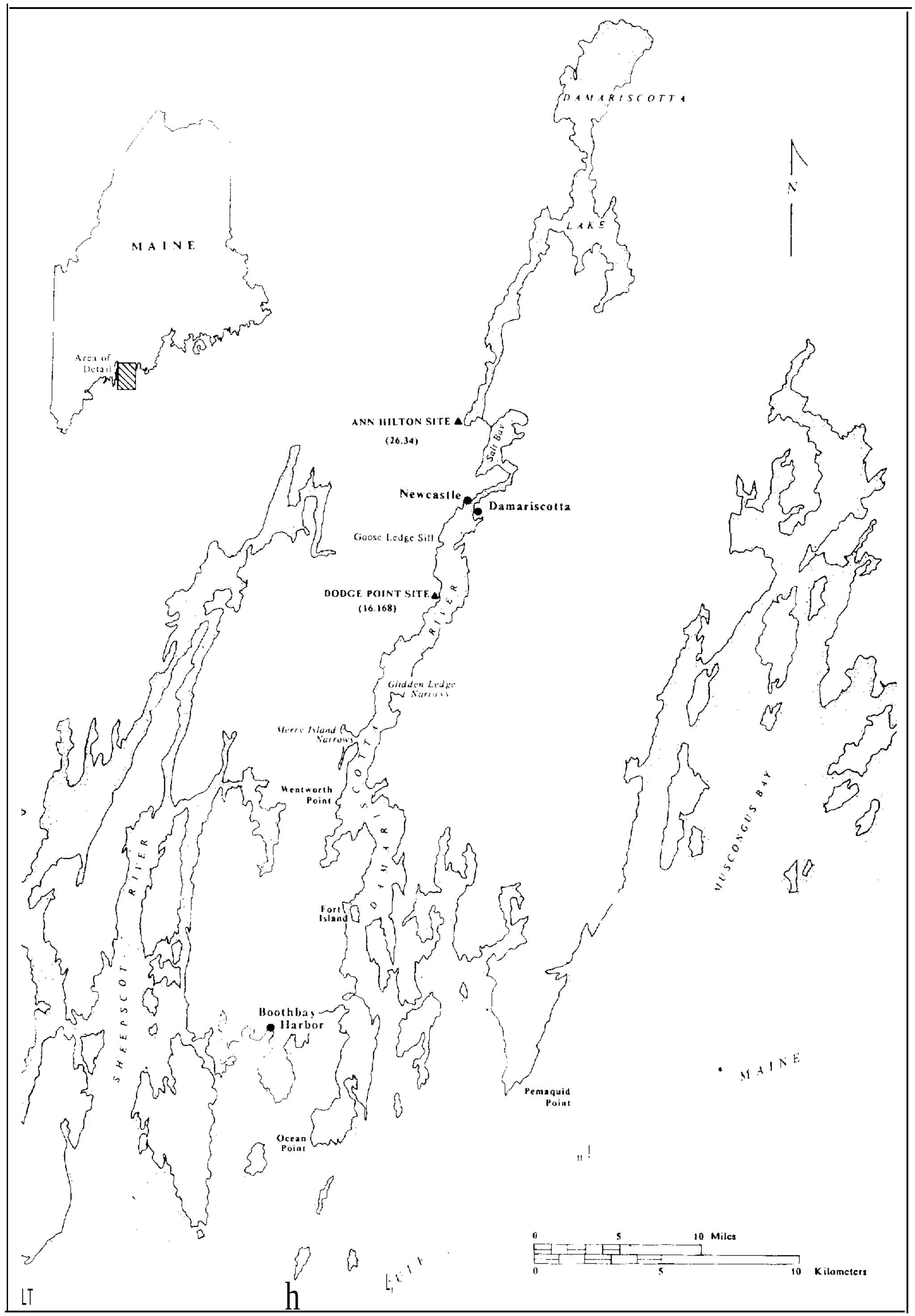


Figure 1. Map of the Damariscotta River and location of the sites mentioned in the text.

iscotta River drains a relatively small watershed extending northeasterly ca. 25 km beyond the head of tide, Five km wide at its broadest point, the total land area drained by this watershed is about 80 km . The head of tide presently extends north of Newcastle into Salt Bay. Highlands along the relatively narrow valley range from ca. 90 ft to 240 ft above mean sea level.

Bedrock in the site area belongs to the Bucksport Formation, Ordovician or Devonian in age, consisting of interbedded sandstones and limestones, (Hussey 1985:39f). In the area just south of the site, the Bucksport Formation is overlain structurally by subpelitic and pelitic schist and sillimanite-bearing migmatite identified as part of the Cape Elizabeth Formation. The contact is interpreted as a premetamorphic folded fault (Hussey ibid). These rock types were generally of low utility for tool manufacture prehistorically.

The bedrock is overlain by glacial till and glacial moraines. On this base, the Presumpscot marine transgression left fine grained facies of silt, clay and sand with minor amounts of gravel (Thompson et al 1985). Minor reworking of these deposits occurred before 11,000 years B.P. (Smith 1985).

The Damariscotta River basin is in the central coastal climatic zone with ca. 170 frost-free days annually, average seasonal temperatures ranging from ca. 20 F to 68 F and annual precipitation amounts of ca. 42 inches (Fobes 1946). Given the relatively small drainage system, the Damariscotta is not subject to the occasional heavy floods and alluvial deposition that are found in Maine's larger river systems. Therefore, deeply buried archaeological sites are not expected. Spring tide range is 3.1 to 3.3 meters along the Damariscotta River estuary.

Mixed hardwood/conifer forests in the area are similar to those found along the coast of New England southward and westward. Dominant species include black oak, red oak, white oak, chestnut, and butternut along with white pine, red maple and black birch. Chestnut, an important species in the area prior its diminution by disease, has been largely supplanted by oaks (Westveld et al 1956:335).

Resident mammal species include moose, white-tailed deer, black bear, snowshoe hare, cottontail rabbit, muskrat, beaver, red fox, otter, harbor seal and grey seal. Various duck and geese species were present seasonally. Studies of nearby estuaries, such as the Sheepscot, have established the presence of a variety of fish species, including tomcod, alewife, smelt, winter flounder, long horn sculpin, ocean pout, atlantic and blueback herring, spiny dogfish, cod, pollock, sturgeon and striped bass. Historic accounts mention atlantic salmon, shad and eel runs during the 19th Century and earlier. Shellfish present include hardshell clam *(Mya arenaria)* and various univalves such as whelk and moonsnail. Populations of oysters were once found in considerable numbers in parts of the Damariscotta estuary and their shells have been recovered from underwater cores taken near Dodge Point (Shipp 1989), but they are now reduced to a remnant population (Cf. Sanger & Sanger 1986 and further discussion below).

LOCAL SEA LEVEL RISE

Understanding relative sea level rise in the Gulf of Maine is critical to interpreting local environmental change. The Damariscotta River estuary is a drowned river valley. It is characterized by at least six basins separated by shallower, bedrock sills (Shipp 1989). As relative sea level has risen (and land subsided) during the Holocene, each basin would flood as high tide crested the sill at its downstream end. For some centuries, the sill would have been the location of a reversing falls, until it became continually inundated. The date at which each basin flooded can be predicted roughly from the depth of the top of the downstream sill (in meters) (Table 1) and a curve of sea level rise.

Recent radiocarbon dates on salt marsh peat and other organic material from 20 localities between Wells and Addison, Maine, has resulted in revised relative sea level rise curves (Belknap *et a/.* 1989). Sixty-eight new dates allow the fitting of age-depth regression relationships after 5,000 years B.P. One combination is a linear rise in relative sea level of 1.44 mm/year from 5,000 to 1,500 B. P., followed by a marked slowing to 0.5 mm/year until recently. (Recent sea level rise data are based upon tidal gauge and

Table 1. Damariscotta River Basins, the downstream sill controlling access of tidal water, and depth below mean high water, from downstream upstream. (After Shipp 1989)

Basin	Silt	Depth of Silt
Christmas Basin	Ocean Point?	Unknown
Long Basin	Fort Island Narrows	-18 meters
Wadsworth Basin	Wentworth Point Silt	? -17 meters
Mears Basin	Merry Island Narrows	? -15 meters
Dodge Basin	Glidden Ledge Narrows	-13 meters
Days Basin	Goose Si1t Ledge	- 9 meters
Sa l t Bay	Main Street Bridge, Johnny Orr	- 4 meters

other historic records.) Another good “fit” with the data is a 1.91 mm/year rate of rise from 5,000 to 2,500 B. P., and 0.71 mm/year rise after 2,500 B.P. There is no indication in these data that one part of the Maine coast has sunk any more quickly than any other, west of Addison.

Shipp (1989:4-46 to 4-47) reports a radiocarbon date of 6340+55 B.P. on initial salt marsh peat, and therefore initial salt water incursion over the 13 meter Glidden Ledge Narrows sill in the Damariscotta River at that time. Recently, a radiocarbon date was reported of 9100 B.P. on paired clam valves from intact deposits at 20 meters depth near the Kennebec River mouth (Dickson 1990). This datum means that probably Long Basin was flooded around 9,000 B.P.

As each basin on the estuary was flooded successively, each underwent a succession of bottom sediment and water salinity changes. Apparently early in the sequence, at least one of the Damariscotta River basins harbored tremendous oyster populations. Shipp (1989) has encountered oysters in core samples from Dodge Basin, These and other oyster deposits appear on several sub-bottom profiles. Whether they are strictly natural accumulations of dead oyster valves, or human-produced shell middens, has not been determined.

After the oyster population in a particular basin succumbed to increased salinity and predators, and as sea level continued to rise, the shellfish fauna changed to one dominated by soft-shelled clam. The occupants of site 16.168 at Dodge Point were harvesting soft-shelled clams (among other things), some three millenia or more after the oyster population had flourished and vanished in Dodge Basin.

The location of the sill named Johnny Orr seems to have provided favorable conditions in one small section of the River, about 10 km upstream from Dodge Point for an extraordinary, if brief, increase in resident oyster populations (Sanger and Sanger 1986). These conditions were apparently facilitated by the presence of bedrock sills at a point 1 km above the present Damariscotta-Newcastle Bridge and at the outlet to Salt Bay. As rising sea levels pushed the head of tide upstream between the two sills sometime after 3000 years BP, the low salinity and gravel bottom of the estuary allowed a spectacular development of oyster beds. These were heavily exploited by Native Americans from about 2400 yrs BP to ca. 800 yrs BP. The oyster productivity ended apparently as sea level and salinity increased to a point that allowed the oyster’s chief predator, the oyster drill, to survive locally and decimate the oyster populations. The oyster population decline may have been accelerated by the gathering efforts of local American Indians who helped to remove the adult oysters necessary to provide favorable bedding for young spawn to survive. After the rich oyster beds declined about 800 B.P. (circa 1200 A. D.) we hypothesize that the attractiveness of the Damariscotta estuary and river system to aboriginal hunter-gatherers decreased slightly when compared with neighboring estuaries.

HISTORY OF INVESTIGATIONS

Site 16.168 at Dodge Point was first recorded during a University of Maine coastal

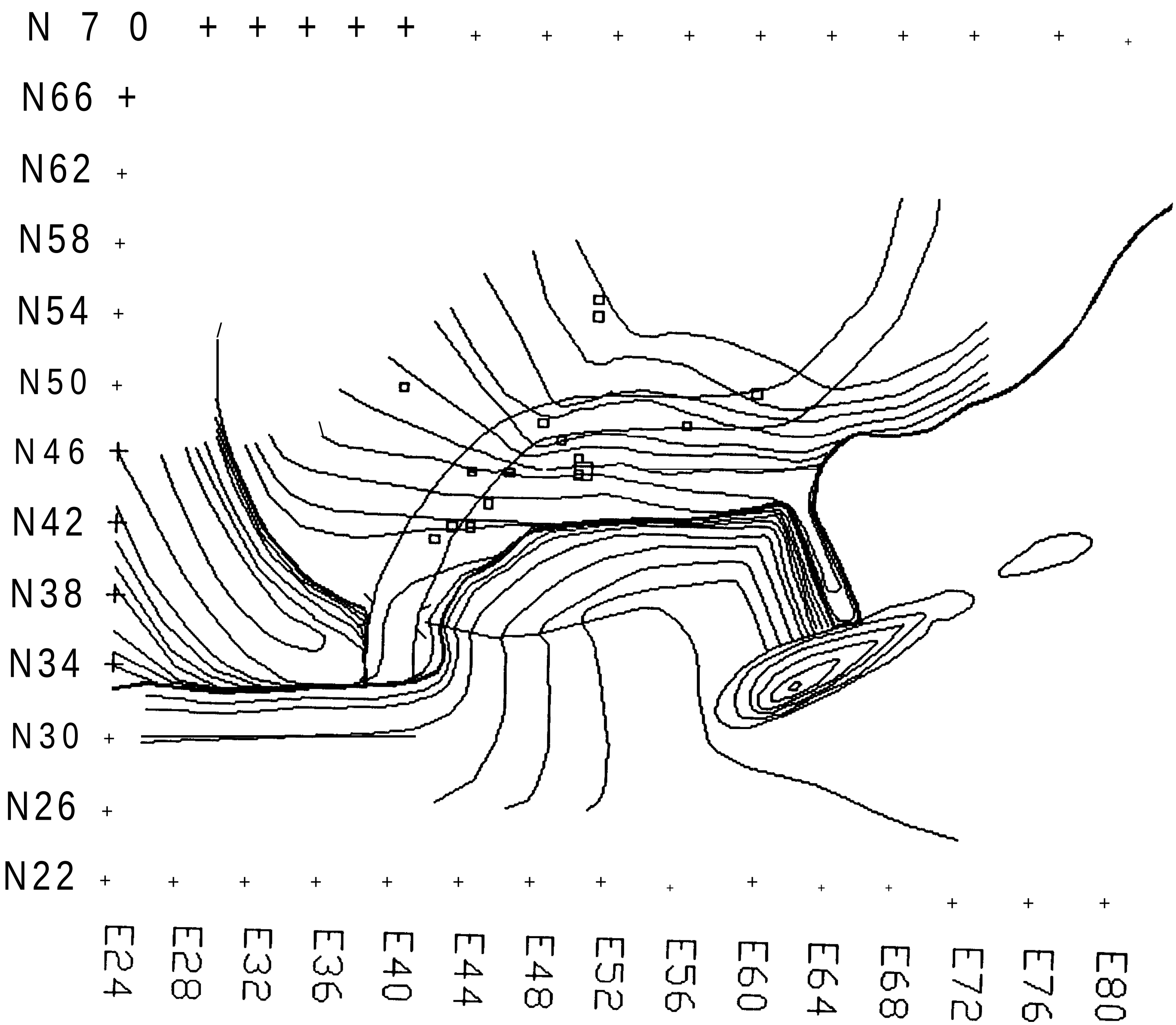
Figure 2. Pedestrian trail with shell scatter at inland limit of the site, looking northwest.

Figure 3. Eroded escarpment, stream and stone culvert where the old road crossed the streambed to the beach, looking south,

archaeological survey in 1981 (e.g. Kellogg 1982). The site was identified as a shallow eroded shell midden extending about 10 meters along the bank. It was not tested at the time. After a brief inspection of the site by Spiess and Hedden in 1989, an intensive testing program was proposed to establish the areal limits of the site, depths of the deposits and nature of the site contents. This intensive test excavation was limited by budget constraints to 3 days of fieldwork.

The inspection had located traces of shell extending back 6 meters from the present shore, indicating that the site was possibly larger than implied by the original survey notes. The inland limit was marked by shell scuffed up along a pedestrian trail leading down to the beach from an unimproved access road (Figure 2). Further shell material was noted where the path cut down the eroding bank to the shore (Figure 3). Shell eroding from the bank extended in a shallow curve from a streamlet on the southwest, thence 10 meters northeasterly (Figure 4). At the northeastern limit of the site a narrow peninsula of remnant glaciomarine deposit extends southeasterly to the midpoint of a large bedrock outcrop (Figure 5).

Figure 6. Contour map of site 16.168 showing road and site limits. Contour interval is 20 cm.



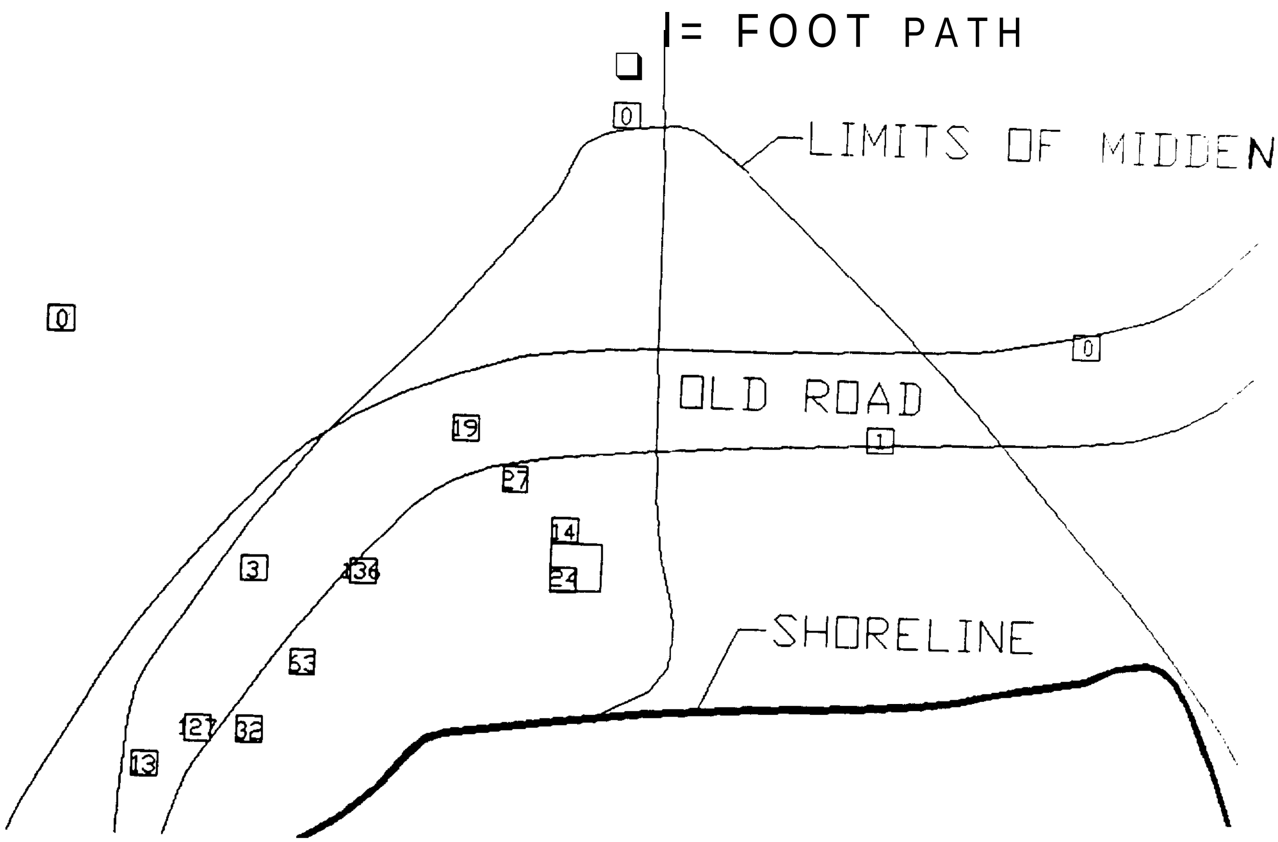


Figure 7. Plan of testpit locations, and *Mya* chonrophore (shellfish fragment) counts.

GEOMORPHOLOGY, STRATIGRAPHY

The shore of the Damariscotta River in the vicinity of Dodge Point drops from rolling uplands over a fairly steep gradient to the west bank. There are only occasional coves and point bars along the shore which offer easy landing for the canoeist. The beach at Dodge Point is one of the better landings along this stretch of the river. The slope of the land above high tide is fairly steep in the site area, descending 3.2 meters over a distance of 20 meters (16% slope). There is an even steeper grade of 32cm (32% slope) between N45 and N46 at E50. However, the area just north of the stream has a relatively shallow grade of 5 to 10 cm per meter. The undisturbed prehistoric cultural deposit is concentrated here, on the shallower slope

The shallow grade continues across the stream and onto the beach. At the time the site was occupied a similar shallow grade to the stream edge and beach beyond had probably characterized this area as well. The bank has eroded back in a shallow arc between the stream and a bedrock outcrop, destroying an estimated 20 square meters of midden and leaving a scatter of artifacts

Figure 8. Three schematic testpit profiles along the upper (northwest) perimeter of the site. Key to stratigraphic layers as follows:

Al, Unit 7, root mass with fine black humus and sand
A2, Unit 3, root mass with fine dark brown humus
A3, Forest duff, root mass with fine dark brown humus and sand
B1/C, Sterile, fine dry orange sand
B2/C, Sterile, very fine olive drab silty sand and clay

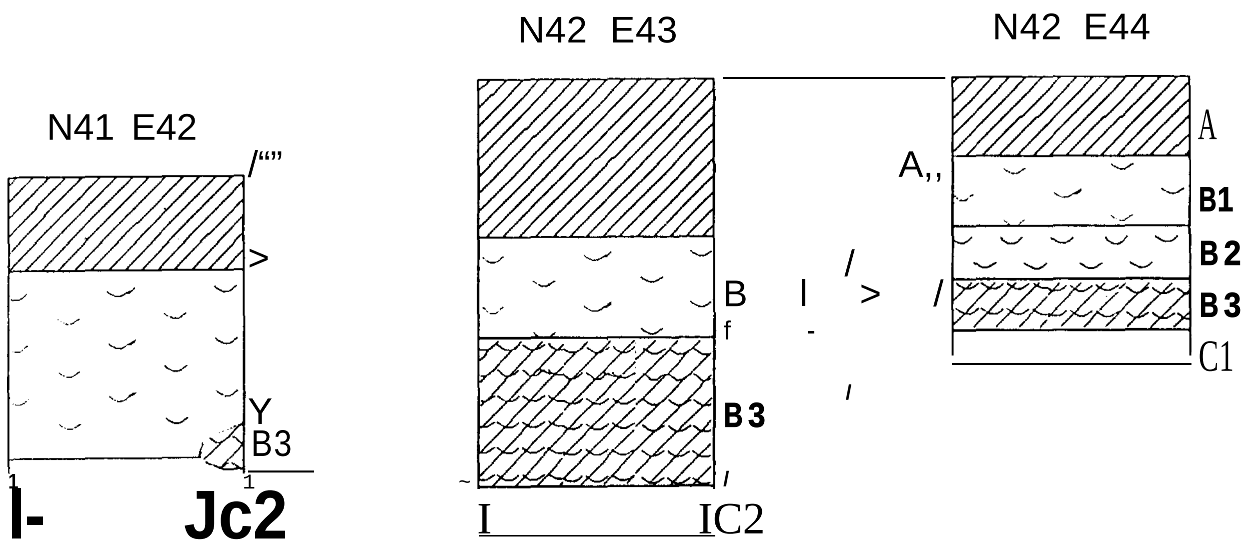
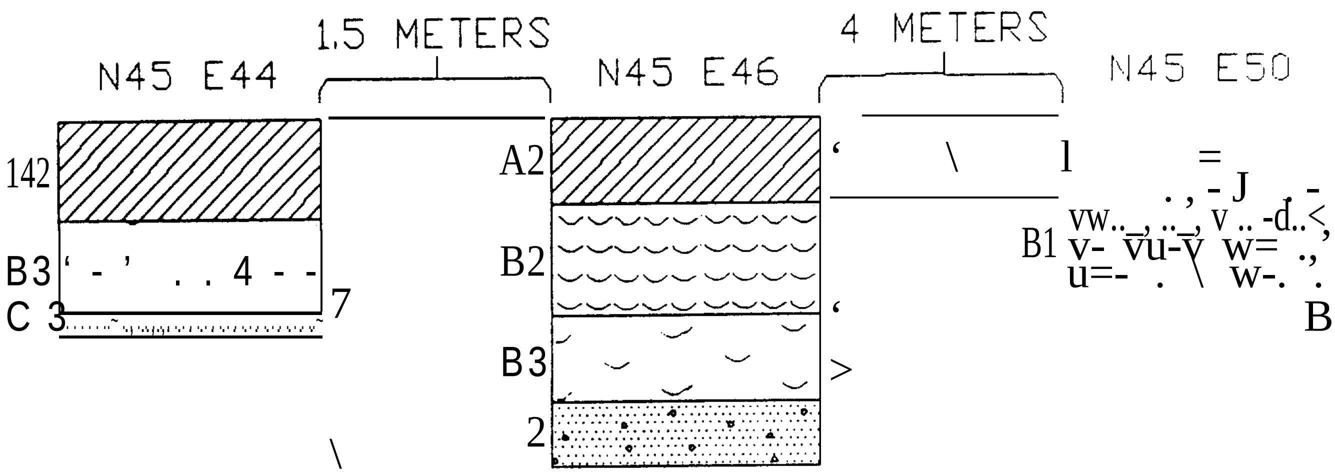


Figure 9. Three schematic testpit profiles near the center (N45) of the shell midden. Key to stratigraphic layers as follows:

Al Unit 6, packed brown silty sand with fire-cracked rock
A2 Unit 7, packed fine brown sand (road fill)
B1 Unit 5, fine dark brown silty sand with bone, firecracker rock and randomly oriented shell
B2 Unit 4, dark brown fine sand with dense shell and bone
B3 Unit 3, light brown fine sand with sparse shell
Cl Sterile, coarse olive yellow sand
C2 Sterile, medium to coarse olive drab sand with pebbles
C3 Sterile, medium light brown sand and shell along the beach margin. The bedrock outcrop



upstream from the site has forced the channel of the Damariscotta River to turn slightly eastward, creating an eddy on the downstream side. The current flow in the eddy has deposited a wide semicircle of sand along the immediate foreshore of the site. Beyond the sand there is a drop-off of 15 meters to the deepest part of the channel (Shipp 1989).

Terminal Pleistocene geomorphic processes affecting the Damariscotta valley have deposited sand and silt in the site vicinity, Along the upper slope, from N50 E48 to N50 E60, surficial deposits consist of fine orange sand beneath 10 cm of humus and brown sand (Figure 8). In the middle of the slope, at N45 E44 to E50, the sand is coarser with some pebbles (Figure 9). Deposits along the lower slope and near the stream bed are fine tan sand to fine silty sand with an increasing proportion of silt nearer the stream. These deposits form the substratum upon which the site has "grown".

Ultimately, the analysis of prehistoric shell middens presumes a sequential series of discrete deposits or dumping episodes contributing to the buildup of the midden. These deposits may or may not have been subsequently scattered or redistributed. In practice, discrete dumping episodes are difficult to discern and often only visible on an excavation wall face. One such discrete dumping episode was noted along the west wall of N45E50 under and around a large cobble projecting from the wall.

Seven stratigraphic units were noted in the limited profiles available for analysis from the 50 cm square testpits. Each unit is interpreted as one or more shell deposition episode(s) of similar or unique character, or a non-shell deposition of cultural origin (e.g. road fill). Unit #1 represents the lowest discernible cultural deposition event and is presumably the earliest. Each unit is listed and described in Table 2.

Unit #1 represents the deepest and most densely packed shell concentration located at the southeast corner of the site on the relatively shallow slope above the stream (N42 E43 to E44). Unit #l is 30cm thick at

Table 2: Stratigraphic Units at 16.168

Unit#	Description
1	Very dense shell and bone with black, organic rich, fine silty sand
2	Dense shell with bone and brown fine silty sand
3	Fine brown sand with sparse scattered shell
4	Dense shell and bone with dark brown fine sand
5	Shell and fine dark brown silty sand with bone and FCR, "shell oriented at all angles"
6	Packed brown silty sand with FCR and occasional shell
7	Packed fine brown sand (used as road f i 11)

N42E43 but thins to 10cm at N42E44. To the southeast Unit #1 is represented only in the northwest corner of N41E42 as a 5cm thick stratum at the base of the midden (Figure 10). Mammal bone recovery from this unit was relatively high. The only biface recovered in situ (Figure 11) was found in this stratum. The black, organic-rich silty sand mixed in the shell suggests that Unit #1 was part of a "wigwam" or other structure living floor. This possibility could not be explored further within the constraints of the 50cm testpits and time available. Immediately above Unit #1 in N42 E44 there is a somewhat less dense shell bearing stratum with brown silty organic sand fill 10cm thick. This unit is designated as Unit #2. It does not appear in the testpits to the southwest on the lower slope (N41 E42 or N42 E43) but may be related to similar strata further up the slope (Unit #4). Unit #3, a fine brown sand with dispersed scattered shell, is located above Unit #2 in N42 E44. Unit #3 is present above Unit #1 in all three testpits on the lower slope. Unit #3 is interpreted as representing the original surface of the shell midden before road fill (Unit #7) was brought in and deposited.

In one of the testpit profiles along the middle slope at N45 there is a reversal of the sequence known from lower down the slope (Figure 9). Unit #3, with sparse scattered shell, underlies Unit #4, a dense dark brown shell stratum at N45E46. Here Unit 3 is interpreted as indicating a period of limited occupation before the deposition of Unit#4. To the southwest Unit #3 is present in N45E44 without Unit #4. To the north east in N45E50, the dense dark brown shell midden takes a different character with shell oriented at all angles and is there designated Unit #5. One potsherd was recovered from Unit #5. Units 4 and 5 are interpreted as representing different aspects of one period of shell deposition. Unit #5, however, rests directly on sterile (non-cultural) subsoil. This indicates that the midden deposits represented by Units #4 and 5 were placed further uphill and away from the lower slope midden deposits of Unit #l and #2. Immediately above Unit #5 in N45E50 is a packed brown silty sand with scattered shell and occasional fire-cracked rock (FCR). This unit (#6) represents the modern surface.

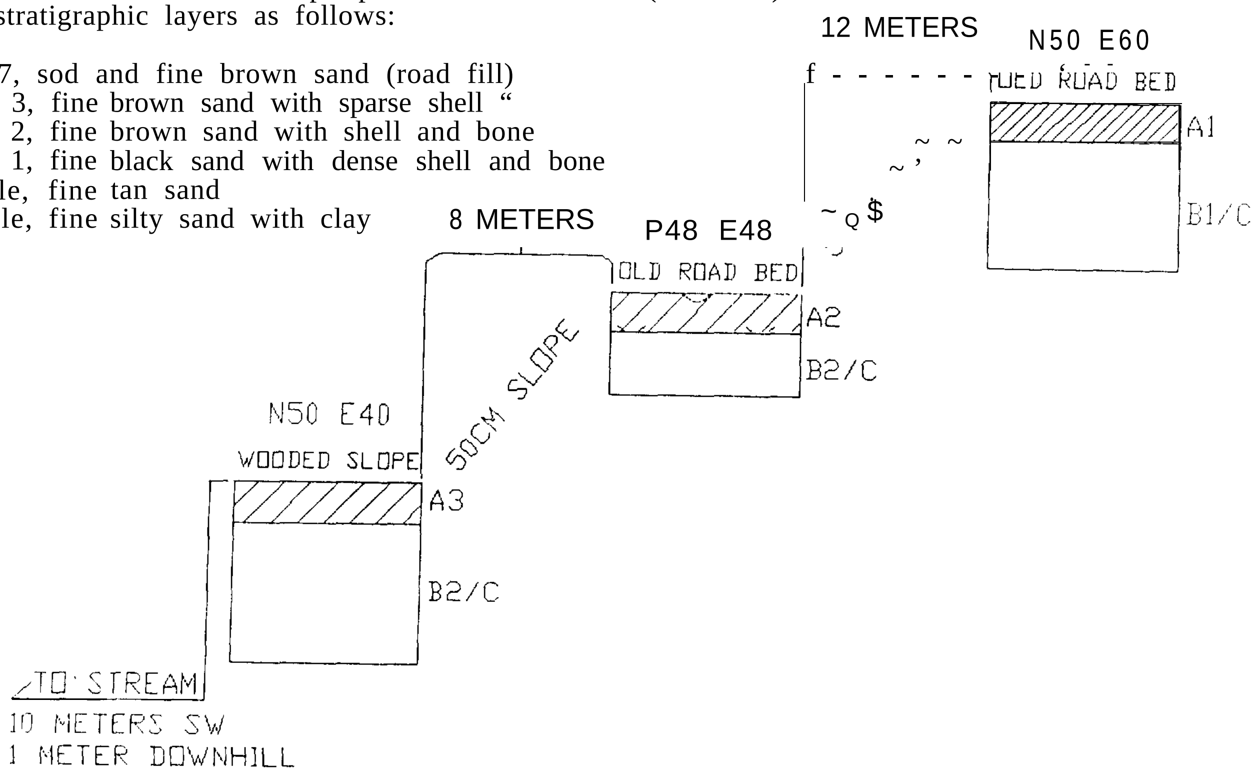
Further up the slope, shell is limited to a thin surface scatter with no other cultural material in association. The only historic modifying event we have identified on the site was the construction of a road sometime early in the nineteenth century to provide access from the beach landing area to inland areas uphill. The road building event is represented in the profiles by Unit #7. Unit #7 is a packed fine silty brown shell free sand which overlies all other units on the lower slope. Unit #7 ranges from 35cm to 17cm thickness on the lower slope (Figure 10). The variations in thickness probably reflect an uneven "hummocky" shell midden surface which was brought up to level grade by fill. The road level at this point was presumably established by the height of the stone slab culvert used to cross the stream. Fill was probably brought down from the upper slope where the road had been cut into the sandy slope (Figure 8).

LITHIC ARTIFACTS

One finished lithic tool, a small stemmed point (specimen 16.1 68.63), was recovered from the test excavation at the Dodge Point site. It is thinned towards the base from excurvate rounded shoulders (Figure 11), and exhibits a relatively thick midsection. Alternating flakes were removed, leaving a wavy edge. A small section of cobble cortex remains on one surface, indicating that the point was made from material flaked off a cobble that had been rolled in a river bed or glacial till. The material is a brownish rhyolite or felsite with small white phenocrysts.

Figure 10. Three schematic testpit profiles at the lower (southeast) end of the shell midden. Key to stratigraphic layers as follows:

A Unit 7, sod and fine brown sand (road fill)
B1 Unit 3, fine brown sand with sparse shell "
B2 Unit 2, fine brown sand with shell and bone
B3 Unit 1, fine black sand with dense shell and bone
Cl Sterile, fine tan sand
C2 Sterile, fine silty sand with clay



The point is similar in manufacturing technique, outline and stem treatment to a point recovered from the Anne Hilton site overlooking Salt Bay on the Damariscotta River (Will and Cole-Will 1989). The Anne Hilton site is a single component 17th Century occupation which has yielded aboriginal stone and ceramic objects and European trade goods including tobacco **pipes** and other items. A similar point has been found at site 17.76 on Allen Island, also in a 17th Century context (Spiess, research in progress).

The Dodge Point specimen was recovered at a depth of 45cm in the middle of stratigraphic Unit #1. Given the lack of any associations that can be attributed to a 17th Century date, the temporal position of the point remains uncertain. All other lithics recovered in situ from the intact shell midden were non-diagnostic cores or battered cobbles (Table 3).

On the eroded shoreline on the north side of the stream course several lithic tools were recovered, including two temporally diagnostic points. One is a side-notched Meadowood point made of striped rhyolite (16.168.88). The Meadowood point is assigned to the Early Ceramic period. The rock material which was used to make this point, banded striped rhyolite was most often used during the Susquehanna Tradition (Bourque, Doyle and White 1984) and Early Ceramic Period (Spiess and Hedden 1983; Spiess, Robertson and Hedden 1988). The use of this material reinforces the topological identification of the point to the Early Ceramic period The other diagnostic artifact from the beach is a fairly broad stemmed point with rounded shoulders, made from an unidentified rhyolite (16.168 .92). The stemmed point is untyped but is similar to ones recovered from "aceramic" contexts along the eastern Maine Coast by David Sanger and guess-dated to a poorly known few centuries around 3000 years BP (Sanger 1979:110).

A scraper made of grey green felsite and a large celt (Figures 12 and 13) with a flaked bit and slight notches at the midsection to secure lashings to a handle were also recovered from the eroded foreshore. The

Figure 11. Points from site 16.168. Narrow side-notched (Meadowood) point at left. Specimen #16.168.63 is at right.

scraper has a steep and relatively broad working edge. Similar scrapers were manufactured throughout the Ceramic period. The flaked celt is not diagnostic.

PREHISTORIC CERAMICS

One potsherd was recovered from the site (in the NW quad of N45E50 from soil Unit 4 or 5). The sherd came from a relatively thin walled (6.2mm) vessel manufactured by coiling. Temper consists of grog (pulverized fragments of fired clay) and possibly shell. (While no shell could be perceived, the spaces left after shell fragments dissolve are present). The sherd exhibits an exterior and interior that had been smoothed. Some light scrape marks on the interior indicate that a leather pad may have been used in the smoothing process. Final decoration, limited to the exterior wall, consists of fabric impression. The impressed fabric appears to have been manufactured of thin cordage with no clear twist (grass fibers?) held together with left oblique twining. The very black interior wall and reddened exterior suggests the vessel had been fired upside down (reducing atmosphere inside and oxidizing atmosphere

Table 3. Lithic Artifacts Recovered from Surface Collection and Excavation of the Dodge Point Site in 1989.

Catalogue #	Description	Material	Loc	Depth (cm)	Weight (9)	Length (mm)	Width (Inn)	Thickness (mm)
63	Point, expanded excurvate shoulders, base broken, made on cortex flake	Rhyolite	N42E44	45	3.9	31.2	17.7	8
87	Scraper Wide in relation to depth, steep edge, worn	Felsite	+N38E58	Surface	3.6	25	27	5.1
88	Side-notched point Tip broken	Rhyolite, banded, striped	+N42E54	Surface	7.3	Est 62	25	6.9
92	Stemmed point Rounded shoulders	Rhyolite banded, striped	+N38E58	Surface	12.0	61.8	28.4	6
82	Celt, side notched flaked bit, broken poll convex dorsal, shallow ventral	Quartzite	+N38E58	Surface	388	110.5	62	40
89	Celt, preform Broken end, chipped opposite, wear polish on one s i de	Slate	+N42E58	Surface	137.6	100	50	21
97	Battered cobble flat, rectanguloid water-worn	Granite	N42E43	50	320	101.2	69.6	29
67	Battered cobble	Granite	N41E45	54	255	85.9	47.5	34
8	Whetstone? Elongated oval cobble NO wear marks	Sandstone	Beach	Surface	61.2	116	25.6	12
13	Core	Quartz	N47E49	41	410	89	85	50
7	Cobble core, battered	Quartz	Beach	Surface	330	95.5	82	33
98	Cobble core, battered along fracture plane	Quartzite	Beach	Surface	1150	160	110	78
116	Large core	Granite	Beach	Surface	890	108.6	84.6	70

on the exterior). The decoration, temper and thin-wall construction mark "this sherd as a fragment of a vessel of Ceramic Period 6 or 7 (Petersen and Sanger 1989), circa 650 to 260 BP (1300 to 1750 AD).

LITHIC DEBITAGE

"Debitage" is a term used to designate flakes of rock struck off cores or tools during the process of manufacture. These are examined, quantified, and the raw material identified. This information can be useful in establishing prehistoric patterns of raw material acquisition and trade. Twenty-seven of the specimens from site 16.168 consist of rock material locally available. The largest proportion of flakes were felsites (N=16, 57%). Banded striped rhyolite is the only

Table 4: Lithic debitage from the Dodge Point site,

Cat#	Description	Wgt (9)	Lgth (mm)	Wdth (mm)	Thcknss (Inn)	Location (cm)	Depth
9	Quartz flake w/ cortex, unitized?	7.3	37.4	19	10.4	Site	Surface
10	Felsite flake, utitized?	8.4	39.6	3.4	6.3	N46E50	0-55
15a	Siltstone thinning flake w/bulb, grey	4.3	28.4	18.4	6.3	N47E49	0-41
15b	Chert thinning flake w/bulb, green	0.5	12.4	12.2	0.3	N47E49	0-41
19a	Striped rhyolite thinning flake	1.1	25.0	18.9	3.1	N46E50	0-55
19b	Felsite thinning flake, grey-green	0.3	13.3	12.0	1.7	N46E50	0-55
19c	Felsite thinning flake, grey-green	0.1	11.9	6.0	1.7	N46E50	0-55
20a	Felsite, thinning flake, burned whitish green	1.9	19.3	17.7	5.8	N45E50NW	0-44
20b	Felsite, thinning flake, grey-green	0.5	16.9	9.9	2.6	N45E50NW	0-44
20c	Felsite, thinning flake, grey-green	0.4	16.9	9.5	2.9	N45E50NW	0-44
20d	Felsite, thinning flake, grey-green	0.3	15.1	10.4	2.2	N45E50NW	0-44
27	Felsite, thinning flake	0.7	20.8	14.3	2.7	N45E46	16-37
28	Quartzite with cortex	2.1	19.0	20.8	5.7	N45E46	16-37
29	Quartzite chip	1.7	22.0	10.5	7.9	N45E50SW	0-28
39	Felsite, thinning flake, black and white phenocrysts	0.4	12.0	12.8	2.1	N45E50SE	0-31
49	Quartz flake, utilized?	1.7	25.1	16.1	5.4	N42E43	35-85
73	Pennsylvania Jasper thinning flake	1.4	22.7	21.4	4.0	N43E45	32-42
83a	Felsite, cortex flake, black and white phenocrysts	2.1	28.8	12.2	4.4	Beach	Surface
83b	Felsite chip	1.3	16.4	17.0	5.5	Beach	Surface
83c	Rhyolite with large phenocrysts	1.1	18.8	18.4	3.7	Beach	Surface
83d	Felsite with black and white phenocrysts	0.7	18.5	12.7	3.2	Beach	Surface
90a	Felsite, grey green w/large phenocrysts	6.0	40.0	33.1	4.7	+N38E58	Surface
90b	Rhyolite, blue black w/large phenocrysts	2.5	27..2	24.3	5.1	+N38E58	Surface
90c	Rhyolite, blue black w/regular phenocrysts	1.2	19.2	15.8	4.5	+N38E58	Surface
90d	Felsite, thinning flake, pink (burned)	0.1	9.7	7.5	1.8	+N38E58	Surface
91	Striped rhyolite	1.1	19.0	12.9	4.3	+N38E58	Surface
93	Felsite, w/cortex dark blue-green	2.2	30.5	18.5	4.3	N42E43	35-50

Figure 12. Notched and flaked celt.

other material represented more than twice (N=5, 18%). The remainder of the materials, represented once or twice, include quartz, quartzite, siltstone, a blue-green chert and one orange/yellow Pennsylvania jasper flake (Table 4).

Banded striped rhyolite is a material particularly favored by lithic tool makers during the Susquehanna Tradition and Early Ceramic period. Pennsylvania jasper is most commonly found in Middle Ceramic age deposits, but may have a broader temporal range extending into the Early or Late Ceramic periods. The remaining materials are consistent with the range of flaked stone raw materials commonly found in Ceramic period sites but are not temporally significant.

FIRE-CRACKED ROCK

Some 80 pieces of rock that exhibited signs of heat stress through reddening or fractures, but did not otherwise show signs of having been utilized, were identified as "fire-cracked rock" (FCR). These rocks are assumed to have been used for heating or cooking purposes. Recent studies have established experimentally that the nature of the fire-related activity can be ascertained by analysis of the frequency of crenelation or warped fractures in the sample. Greater

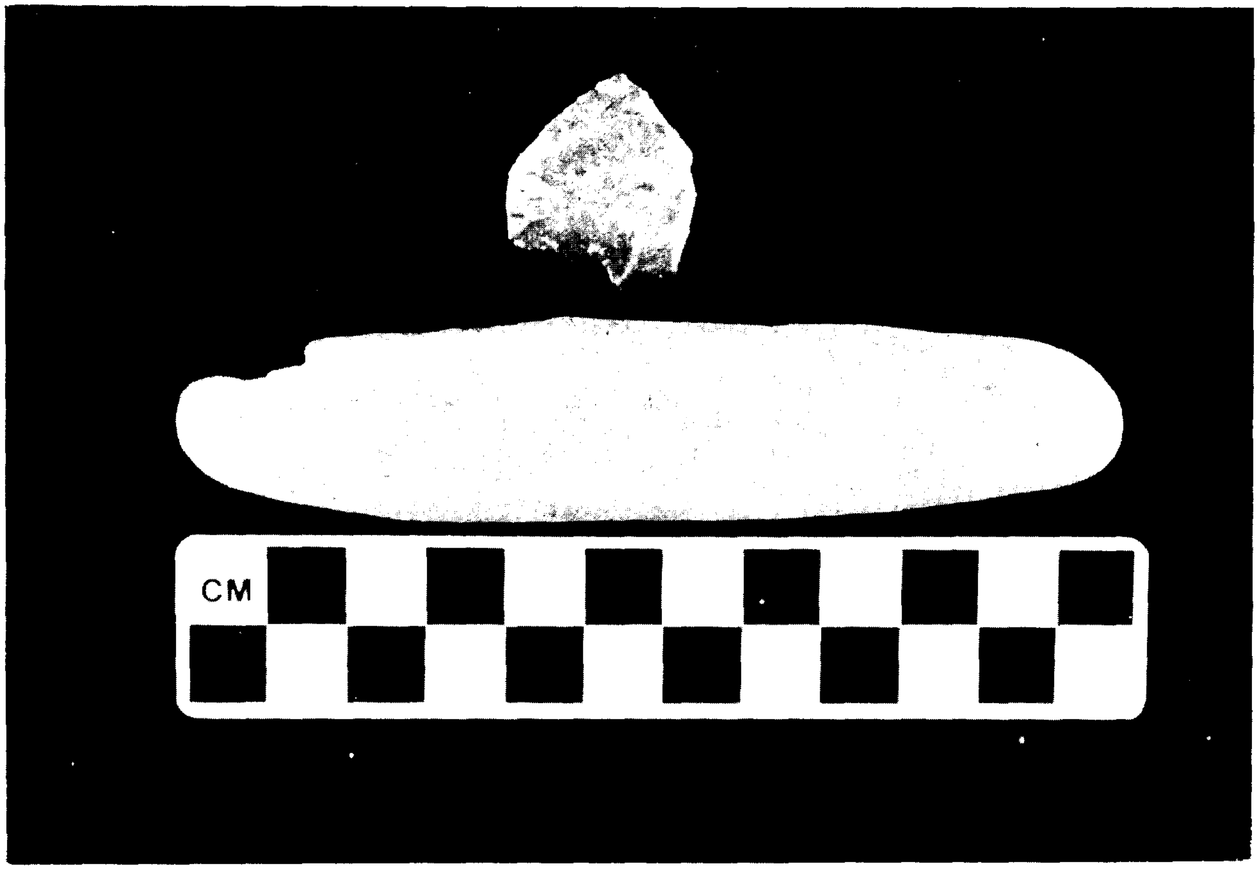


Figure 13. Sandstone abrader and felsite scraper.

extremes of heating and cooling induce more marked crenelations in the fracture planes when the rocks crack. Analysis of a sample from a single activity area, such as a hearth feature, may elicit significant information on the nature of fire related activity (Yoon 1986). Such activities, ranked in ascending order from low heat stress to high heat stress, include 1) simple fire-hearths banked by rocks; 2) earth ovens for roasting and steaming; 3) sweat-lodges involving the sprinkling of cold water on pre-heated rocks to create steam and 4) stone-boiling, a method of cooking soups, stews and gruel by dropping heated rocks into water.

The analytical process for fire-cracked rock is still in the process of testing and development. The fracture types used in this study were developed by David Yoon and were initially tested by us (Spiess, Hedden and Robertson 1990) on a site on the Kennebec River. Yoon proposed 6 rock fracture types and a type O for rocks that had been heated but not yet stressed to the point of fracture. Type 1 shows extreme crenelation on cortex edges and may yield a central core fragment that resembles an apple core. Type 2 includes a fissured section called a potlid and a basal section (a and b respectively). Type 3 is basically the same as 2 but with crenelated edges. Type

4 is a blocky fracture. Type 5 is a blocky fracture with crenelated edges. Type 6 represents rock, usually of large and or poorly cemented grains, which has crumbled under stress. In general, for all generic types of rock, the higher the proportion of crenelated fractures the greater the heat stress indicated. However, it must be kept in mind that such stress fractures occur only after repeated use (experimentally induced only after 4 to 17 cycles of heating and cooling) and may differ for rocks of different origins and grain size, i.e. those of igneous origin may tend to fracture differently from those of metamorphic or sedimentary origin.

Of the 80 FCR that were assigned a type of fracture, 62 (78%) were igneous. Five (6%) were metamorphic or meta-sedimentary and 13 small pieces (16%) were typed by fracture but not identified to rock type. 21 (26%) exhibited Type 1 fractures and 46 or 58% included some degree of crenelation (Types 1, 3 and 5 combined). These totals represent the highest degree of heat stress recorded for the limited number of FCR assemblages we have analyzed. All of the rocks were of a size and weight range which could be readily handled (with the aid of sticks or other insulating lifting tools!) with a mean weight of 61.3g (4903.9g divided by N=80) and a range in weight from 2.8g to 466.0g. These data indicate that the rocks had been subject to the kind of stress that would be expected with stone-boiling activity.

VERTEBRATE FAUNAL REMAINS

Vertebrate faunal remains recovered from our test excavation are listed in Table 5. Fifty-eight bones (35%) were recovered from the black shell midden (Unit #1) and 108 (65%) came from the dark brown midden (Unit #4). Five other bone fragments were picked up along the eroded beach front. These probably belong to eroded sections of Unit #1. All but two were identified as mammal. Species present include deer *(Odocoileus virginianus,* n =19 fragments), moose *(Alces alces,* n = 1 fragment) and beaver *(Castor canadensis* n = 2 fragments). Deer bone fragments were found in both Unit #l and Unit #4. Moose and beaver bone were limited to Unit #4. One deer molar exhibited a wear pattern characteristic of 2 or 3 year old deer. Much of the remaining bone could not be identified to species, although most come from large to medium large mammals. Only one bird bone (of indeterminate species) was recovered, and no fish or reptile bones were recovered. Table 4 lists the faunal data by testpit or surface location, depth and stratigraphic unit.

Between 1979 and 1981 University of Maine archaeological field crews under the direction of David Sanger tested several sites along the Damariscotta River as part of a coastal survey in the Boothbay Harbor region (Kellogg 1983). The faunal collections from these excavations were identified and analyzed by two graduate students, Catherine Carlson and Thomas Chase. Carlson (1986) specialized on fish remains and Chase (1986) on mammal, bird and shellfish remains. Table 6 summarizes faunal data from four sites they tested along the Damariscotta estuary. These are listed from north to south, with Dodge Point located near the middle of the distribution. All four sites yielded Middle to Late Ceramic ceramics and lithics (Carlson 1986:86-88).

In the context of the faunal samples collected from four other shell middens in the Damariscotta Estuary, Dodge Point best fits the criteria for a cold season site. No fishbones were recovered during excavation. Bones from small winter species such as tomcod or flounder can slip through the 1/4 inch mesh screening used on the Dodge Point site and may have been missed. However, flotation of several soil samples in the laboratory failed to yield any fishbone. Carlson based her seasonal estimates on the presence/absence of identifiable fish species in the site collections. She distinguished between low diversity of fish species expected from cold season sites and the high diversity expected during the warm months (1986:111).

SHELLFISH REMAINS

At least two species of bivalve were present in the matrix of the site. The soft shell clam *(Mya arenaria)* was the dominant species. Blue mussel *(Mytilus edulus)* was noted in the deeper parts of Units 1 and 4 strata.

Table 5. Faunal remains from the Dodge Point site.

Taxon	Body parts	Number of Bones	Total weight
N38E58 - Surface			
O.virginianus	phal, tibia, humerus	3,1 individual	31.7g
M/L mamnal	longbone fragment	1	3.2g
N41E42 - Unit #1 50-55cm	below surface		
mammal indet.	not id.	1(burned)	1.5g
N42E43 - Unit #1 55-85cm	b.s.		
O.virginianus	carps med., patella	2(1 burnt 3.2g)	9.5g
Artiodactyl/O. v	metapodial	1	2.8g
mammal indet.	longbone fragment, not id.	5	1.1g
M/L mammal	longbone fragment, not id.	24	27.8g
Lg mammal	longbone fragment	6	22.3g
N42E44 - Unit #1 42-53cm	b.s.		
O.virginianus	ulna	1	0.8g
M/L mammal	longbone fragment, not id.	9	9.4g
Lg mammal	vert.	1	3.5g
N43E45 - Unit #2 32-42cm	b.s.		
Artiodactyl/O.v.	metapodial	1	4.2g
M/L mammal	longbone fragment	5	19.3g
mammal indet.	longbone fragment	2	0.8g
N45E46 - Unit #4 17-35cm	b.s.		
Castor canadensis	femur, scap.	2	4.8g
O.virginianus	ulna, pelvis, capitate	3	5.3g
Artiodactyl/O.v.	scap.	2	5.7g
S/M mammal	longbone fragment	1	0.3g
M/L mammal	longbone fragment	6(1 burnt 1.0g)	4.3g
Lg mammal	longbone fragment	1	8.2g
N45E50 SEq - Unit #5 10-31cm			
O.virginianus	second molar. lower	1(2-3vrs)	1.4g
M/L mammal	longbone fragment, not id.	4 ‘	2.3g
SUq- Unit #5 10-28cm			
H/L mammal	longbone fragment	3	2.5g
Mammal indet.	not id.	3	3.59
SUq- Unit #5 28-32cm			
M/L mammal	longbone fragment	1(calcined)	0.5g
Mammal indet.	not id.	1	0.29
SWq - Unit #5 30-47cm			
O.virginianus	humerus	1(meas.)	35.2g
M/L mammal	longbone fragment	3	3.lg
Lg mammal	longbone fragment	2	8.lg
NEq - Unit #5 20-43cm			
M/L mammal	longbone fragment	3	1.9g
Mammal indet.	Not id.	1	0.5g
Not id.	Not id.	1	0.3g
NWq- Unit #5 20-44cm			
O.virginianua	phalange, metpodial	3	10.1g
Alces alces	fibula	1	8.1g
Lg artiodactyl	tooth	1	1.3g
M/L mammal	longbone fragment	19	15.7g
Lg mammal	longbone fragment	2	7.1g
Mammal indet.	not id.	5	1.6g
N46E50 Unit #5 18-40cm			
O.virginianus	sesamoid	1	0.4g
M/L mammal	Longbone fragment	10(3 burnt 1.9g)	11.7g
Lg mammal	rib	1	0.79
Mammal indet.	not id.	2	0.3g

Table 5 con't.

N47E49 Unit #4 10-28cm			
O.virginianus	phalange,metapodial	2	3.3g
M/L mammal	longbone fragment	7	5.4g
Lg mammal	longbone fragment	1	8.7g
Mammal indet.	not id.	5	1.6g
Aves	longbone fragment	1	0.3g
N48E48 Unit #4 8-15cm			
M/L mammal	longbone fragment	6	4.6g
Lg mammal	rib, longbone fragment	2	3.9g

Table 6. Summary of identified faunal remains and seasonality data from four sites in the Damariscotta estuary.

Site	Location	Mammals and Birds	Fish	Season (Carlson 1986)	Season (Chase 1986)
26.27	upper estuary, west shore	deer, beaver, moose bear, turkey	tomcod, flounder	equivocal	late winter, spring
16.8	upper estuary, east shore	deer, beaver, moose	sturgeon, cod	late spring, early summer	
16.68	Wentworth Pt. vicinity	none reported	flounder, sculpin	summer, fall	
16.73	lower estuary	deer, beaver, moose, sea mink	all of above, plus striped bass	early summer, summer, fall.	spring, February-May June-July

One possible oyster shell fragment was recovered but was too worn to be positively identified. Several fragments of univalves were also recovered (Table 7). Blue mussel in shell middens decomposes rapidly into chalky blue-white fragments which are not readily quantifiable. Thus, we can only say that mussel represents a minor, unquantifiable portion of the shellfish collected by Dodge Point inhabitants.

Of the clamshell, we only collected *Mya* chondrophores (or hinges) in the field. Since only one chondrophore is present for each individual clam, the total number of chondrophores represents the minimum number of individual clams harvested and deposited in the excavated portion of the midden (N = 415, comprised of 373 measurable individuals plus 42 broken chondrophores). The average density of chondrophores in the 12 testpits where they occur is 38 per 50cm square (453 divided by 12). However, the actual occurrences range from 1 to 136 chondrophores. The high density occurrences are limited to testpits along the eastern shoulder of the old road bed, the area of midden closest to the stream (N42E43 and N45E46). By measuring the widths of the chondrophores (Table 8), an index of the size, quantity of meat and range of variability of the clam sample can be obtained (Spiess and Hedden 1983:201f). The clam shells that we recovered generally exhibited thick shells and a highly corrugated exterior morphology, features associated with a rocky or gravelly clam bed. No attempt was made to pinpoint the probable clamflat(s) harvested by the site's inhabitants.

Additional procedures permit analysis to determine the season of harvest by microscopic examination of growth lines on chondrophore specimens (Spiess and Hedden 1983:203-206). This method involves mount-

Table 7. Univalve species at 16.168

Location	Depth	Weight(g)	Species
N42E44SW	35-85cm	3.7	Lunatia heros (Common N. Moon Shell)
"	"	1.8	Sp. unid.
N43E45SW	40-67cm	7.0	L. heros
"	0-40cm	2.5	Sp. unid.
N45E46SW	17-51cm	1.7	L. heros
N46E50SW	17-55cm	1.2	Sp. unid.
N45E50NE	20-43cm	1.8	L. heros
N45E50SE	19-31cm	1.2	Periwinkle, species unidentified

Table 8. Means and standard deviations for *Mya arenaria* chondrophore measurements

Testpit Location	Number	Mean	Standard Deviation
N41E42 SW 20-55cm	12	10.95mm	1.65
N42E43 SW 35-55cm	63	10.62mm	2.9
N42E43 SW 55-85cm	44	10.67mm	1.16
N42E44 SW 17-35cm	28	10.3 mm	1.5
N43E45 SW 17-42cm	32	10.6 mm	1.29
N43E45 SW 42-67cm	28	9.76 mm	2.88
N45E44 SW 18-37cm	3	9.87mm	1.34
N45E46 SW 17-51 cm	128	10.57mm	1.96
N45E50 SW 15-28cm	7	10.96mm	1.62
N46E50 SW 17-55cm	11	9.72mm	3.55
N47E49 SW 10-28cm	27	10.17mm	2.57
N48E48 SW 8-20cm	17	10.08mm	2.1
N48E56 SW 0-20cm	1	9.0 mm	
N54E47 NE 10-28cm	2	10.05mm	3.04

Table 9. Growth layers in a sample of *Mya* from the Dodge Point site, measured from acetate peels of chondrophore sections. Measurements in microscope recticle units at 30x magnification. Slash mark (/) denotes annulus formation. (x) indicates unmeasured and uncounted previous growth. Last layer forming is at the right. See Spiess and Hedden 1983:203-206.)

Specimen	Growth sequence	Summary
3.	30/18/17/17/10.5/3/2	decreasing growth mode, estimated 100% of annual growth
6.	x/6/6/5/5/4/3.51	annul us forming
7.	25+ layers, last 10 very thin. Old clam or multiple layers per year.	
8.	x/15/11/12/8.5/7.5/	annulus forming
9.	multiple Layers, thinly spaced.	Not readable for season of death.
10.	x/15/13/11/10/	annul us forming
11.	x/1.5/1/1.5/1.5/1.5/	annul us forming
13.	not readable	
15.	20 or more layers, last 5 are closely packed and unreadable	
17.	x/6/6/5/4/5/2.5/3/2/	annulus forming
18.	not readable	
21.	x/8/7/6/7/3.5/5/3/	annulus forming
22.	x/12/9/8/4/2/	annul us forming

ing the chondrophore specimen in resin, grinding with a lapidary wheel to expose a cross-section of chondrophore and preparing an acetate peel for examination at 50 magnifications under a microscope. By counting the annuli, dark lines that represent periods of arrested growth (winter), the age of the clam can be established. Measurements of new growth (if any) from the last completed annulus provide a basis for estimating the season of harvest (Table 9). The majority of clams (7 of 8, 87.5%) in the sample we sectioned from the site exhibit an annulus forming. Those that do not exhibit an annulus forming exhibit full thickness growth. This growth state assemblage is characteristic of late winter or early spring (roughly March-April). By late April and May, a few clams (10-20% of a sample) exhibit new growth layers.

EURO-AMERICAN HISTORIC MATERIAL

Six items of probable 19th Century Euro-American origin were recovered from various locations within the site. These items included brick fragments, bits of cement or grouting and one clear glass jar fragment (Table 10). All were recovered while screening testpit material, hence exact stratigraphic provenience is unknown. These materials represent archaeologically non-significant Euroamerican activity. No 17th century Euro-American goods were recovered which could have confirmed a Contact Period occupation.

SITE SIGNIFICANCE AND CONCLUSIONS

The presence of a fresh water stream, a fine beach for landing and relatively sheltered location make 16.168 an inherently attractive campsite for canoeists in the Damariscotta estuary. The evidence from 1989 testing at 16.168 indicates that the site was used more than once over the past three thousand years, probably as a cold weather period hunting camp. The relevant data can be summarized as follows.

Two artifacts from 16.168 are certainly temporally diagnostic. These are 1) a side-notched point of striped rhyolite of a style called Meadowood (Early Ceramic), and 2) the grog and shell tempered fabric impressed potsherd, attributed to the Late Ceramic Period or Early Contact Period.

The remaining artifacts fit within the Ceramic tradition generally, but we are less confident about their age. Two points are in this group. These include a stemmed point similar to an untyped point style which has recovered in "aceramic" sites in the Passamaquoddy Bay area, and a small stemmed point made by marginally retouching a flake. The small stemmed point is similar to a point found in 17th Century context at the Ann Hilton site (Will and Will 1989) and at Allen Island (17.76) (Spiess unpublished).

All the lithic artifacts were found either on the eroded beach front or in the dense black soil and shell midden (Unit #l) that constitutes the lowest culture bearing stratum at the site. The single potsherd came from a brown soil shell midden (Units 4 & 5) located higher up the slope. Deer bones were recovered from all three units. Moose and beaver bones were limited to Units 4 and 5.

The high organic content of the black soil and shell midden suggests that we encountered a living floor, though no hearths or recognizable features were visible in the testpit profiles. We have suggested that one area of particularly dense shell accumulation in Unit #l (black soil shell) and one in Unit #4 (brown soil shell) may represent shells heaped around a lodge wall to provide additional insulation in cold weather. Larger horizontal excavation is needed to confirm the suspected presence of living floors.

Personal experience during three days of excavation established that the site area is extremely buggy in late spring and early summer with mosquitoes, deerflies and blackflies in unremitting abundance. The site is sheltered from the prevailing westerlies and there is little relief from the heat or the flies. These summertime disadvantages do not apply to cold weather seasons, however, when exposure to the morning sun and shelter from the wind would be a more positive attribute.

The quantity of large mammal bone and complementary lack of fish and bird bone at the site tend to support an inference of a winter hunting camp. Fishing is poor for the middle and upper reaches of the Damariscotta Estuary after tomcod finish their spawning in mid-February and before the

Table 10. Historic items recovered during the test excavations at the Dodge Point prehistoric site.

Cat#	Description	Wgt(g)	Location
66	Brick w/ grit temper	6.5g	N41E42SW
51	Cement w/ reddish facing from bonding with brick.	3.1g	N42E43SW
32	Brick fragment	0.2g	N45E50NE
41	Clear glass(jar fragment)	0.6g	N45E50NW
16	Brick fragment	0.3g	N47E49SW
86	Cement or grout	20. 3g	Beach, ca. N38E58

spring runs of alewife, shad and sturgeon begin (Carlson 1986). Birds may also be in short supply during this period.

Use of site 16.168 as a small, cold weather encampment during the Late Ceramic or early Contact Period is a plausible interpretation of our test data. However, we consider this interpretation preliminary, due to the small size of the sample. Possible seasonality of the earlier occupation(s) at the site, represented by two Early Ceramic points, is unknown because there are no faunal remains that can be associated with assurance.

Several years of archaeological testing in the Boothbay region, directed by David Sanger, have resulted in a large sample of faunal data. However, the data have not yet been used to reconstruct a prehistoric subsistence/settlement cycle for the Sheepscot and Damariscotta estuaries. Oysters from the large oyster shell middens at Damariscotta were harvested during a no growth season (late fall or winter), while other evidence suggests summer and fall occupation there (Sanger and Sanger 1986:72). Carlson (1986) has studied the fishbone from Ceramic Period shell middens in the Boothbay area, and produced season of fishing estimates based primarily upon fish species presence, numbers, and age group. Chase (1986) produces season of site occupation estimates based upon clamshell sections, mammal bone data (e.g., deer antler shedding), and mammalian tooth sectioning. Sometimes the results are internally inconsistent, however. For example at site 16.73 on Fort Island, Carlson posits early summer, summer and fall occupations. Chase postulates a probable spring season for clam harvesting (or multiple seasons including spring), and deer hunting from February through June minimally, possibly as late as September. It is unfortunate, but we are not yet in a position to fit data from such a small site as Dodge Point into a coherent local subsistence and settlement pattern picture.

MANAGEMENT RECOMMENDATIONS

There are three long-term management problems to be solved at site 16.168. (1) The most immediate concern, and perhaps the easiest to mitigate, is the pedestrian traffic along the trail to the small beach adjacent to the site. This traffic has created a beaten track through the site and over the bank, causing soil compaction and particularly rapid erosion on one small portion of the site. (2) Public use of the area, coupled with natural curiosity engendered in many people by seeing a shell midden eroding along the shore, may increase the potential for casual digging. There is also a potential for major looting. (3) The height of high tide will continue to increase along the Maine coast because of two factors. Firstly, the coastal bedrock of Maine is sinking slowly. Secondly, global climate is warming and sea level will rise steadily over the next half-century at least.

Each of these problems has concrete solutions, some of which include options. (1) Pedestrian traffic along the trail to the beach should be rerouted away from the site. Our fieldcrew began the process by cutting brush and redirecting the trail, but formal planning, follow-up and monitoring of this matter should be a priority. (2) A site at risk to looting can be protected legally, or excavated to recover the data it contains before it is destroyed by unsystematic looting. (3) Sites eroding along the coast can be protected from erosion by construction of erosion-control structures, usually a combination of loose rock rip-rap, gravel or cobbles, and a synthetic filter-cloth liner. Or, alternatively, the data in the site can be recovered by archaeological excavation.

The protection option mentioned in (2) above includes two steps which will make Maine's Antiquities Law (27MRSA ss 371-378) applicable to the site. The first step is nomination to the National Register of Historic Places. The test excavation accomplished by MHPC in 1989 should be adequate to accomplish that task. The second step is to post the site with signage that warns against ground disturbance and refers to the Antiquities legislation. Finally, the site must be monitored periodically to ensure that the prohibition against excavation is enforced. Violation of the Antiquities law (unlawful excavation without a permit) can be prosecuted by the Attorney General's office, with a penalty of up to $1000 per violation.

The excavation option mentioned in (2) and (3) above is called "data recovery". The rationale is to recover all the archaeological data in the site with the best currently available techniques. However, this option cannot be applied every time a site is at risk (much as archaeologists like to dig!) for two reasons, the primary practical one being that it is expensive and these are days of limited resources. On a more theoretical plane, scientific techniques and our sophistication in interpreting archaeological data will (hopefully) continue to grow during the next decades and centuries. Prehistoric archaeological sites are a finite, endangered resource. ("They don't make 'em anymore".) In this way, they are unlike even an endangered biological species that can reproduce if protected. Therefore, one goal of the historic preservation program is to leave a sample of sites to be dug in the future.

Doing "nothing" at 16.168, as with so many coastal sites, is an unsatisfying option. If it is not protected from erosion, or not excavated for data recovery, it will ultimately (on a scale measured in decades) be destroyed.

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