

United States Department of the Interior
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National Register of Historic Places Multiple Property Documentation Form

This form is for use in documenting multiple property groups relating to one or several historic contexts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. For additional space use continuation sheets (Form 10-900-a). Type all entries.

A. Name of Multiple Property Listing

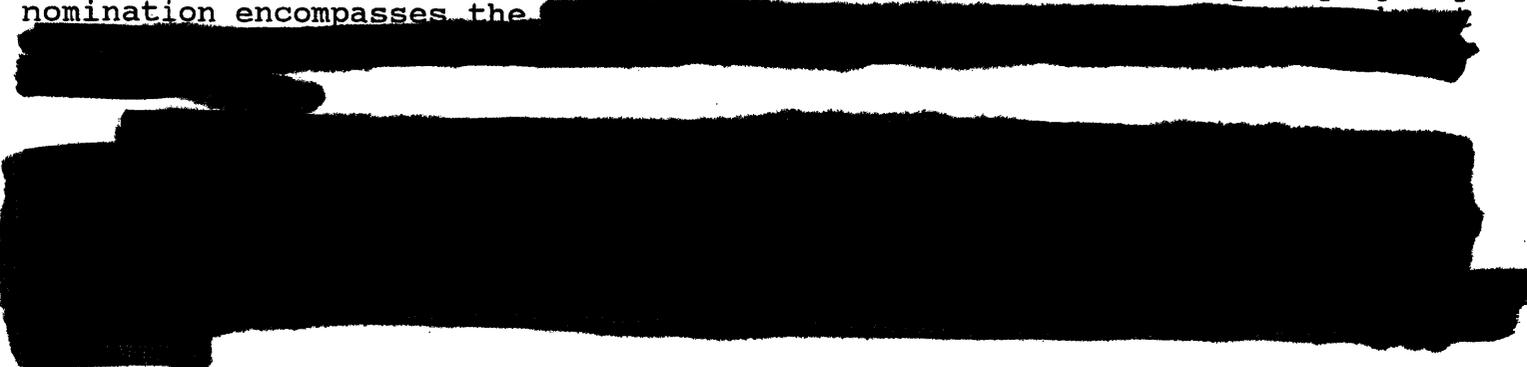
Penobscot Headwater Lakes Prehistoric Sites

B. Associated Historic Contexts

Paleoindian, Late Paleoindian, Early and Middle Archaic, Laurentian Tradition,
Susquehanna Tradition, Ceramic Period

C. Geographical Data

The Penobscot Headwaters Lakes Prehistoric Sites multiple property nomination encompasses the



See continuation sheet

D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR Part 60 and the Secretary of the Interior's Standards for Planning and Evaluation.

Edward J. Thibault
Signature of certifying official
Maine Historic Preservation Commission
State or Federal agency and bureau

9/18/95
Date

I, hereby, certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

Edson H. Beall
Signature of the Keeper of the National Register

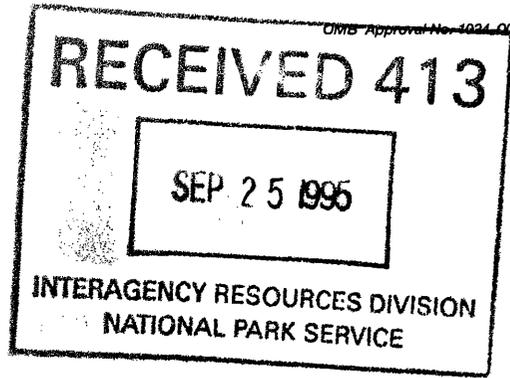
10/31/95
Date

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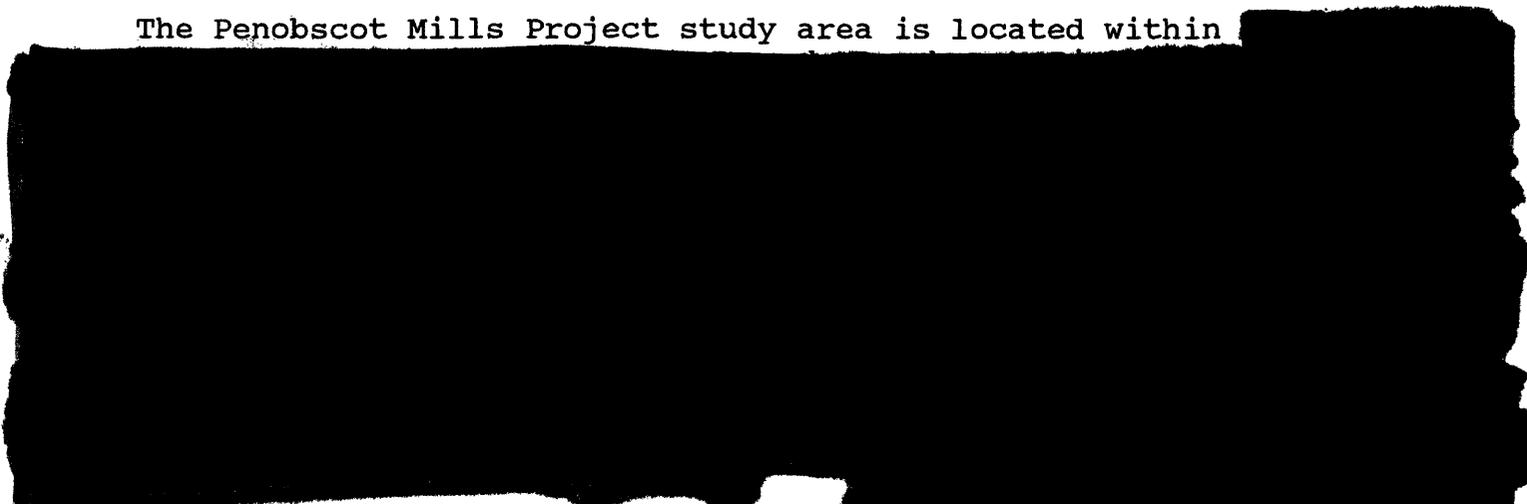
National Register of Historic Places Continuation Sheet

PENOBSCOT HEADWATER LAKES PREHISTORIC SITES

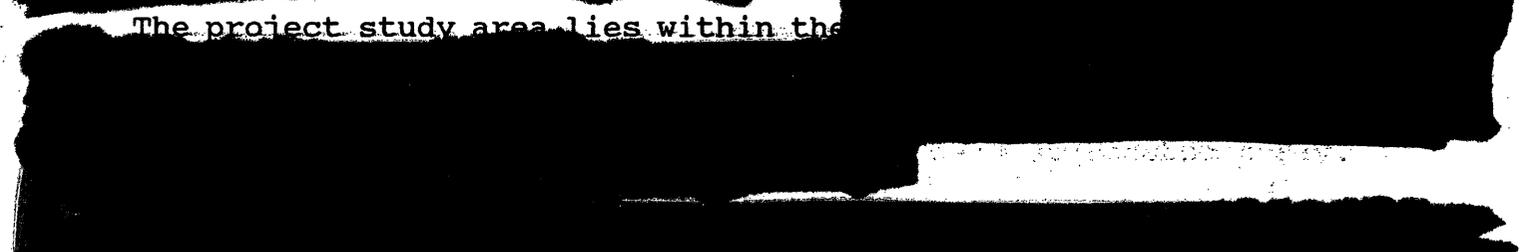
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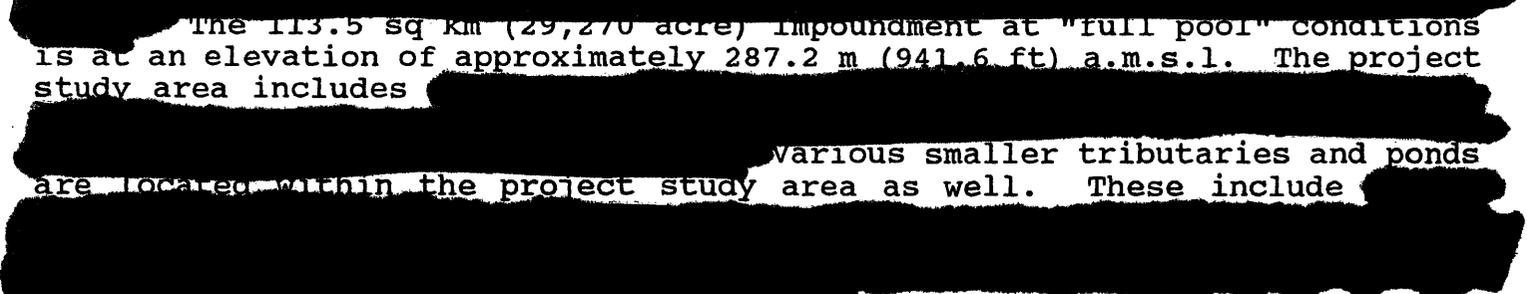
The Penobscot Mills Project study area is located within



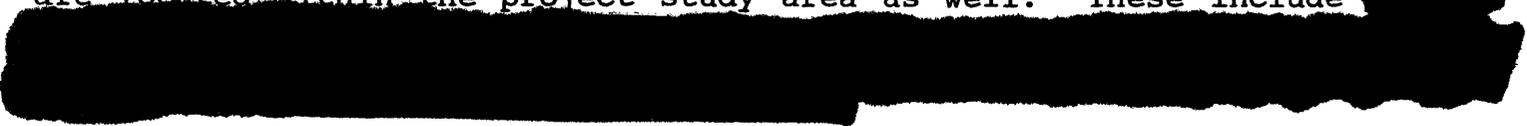
The project study area lies within the



The 113.5 sq km (29,270 acre) impoundment at "full pool" conditions is at an elevation of approximately 287.2 m (941.6 ft) a.m.s.l. The project study area includes



Various smaller tributaries and ponds are located within the project study area as well. These include



The current impoundment was originally created in 1916 for the purpose of water storage and log driving. In 1953, with the construction of [redacted] it was used for water storage, log driving and hydroelectric generation. With the cessation of log driving in 1972, the primary uses of the project became water storage and hydroelectric generation. The dam, located at [redacted], substantially increased the size of an older impoundment created by the inundated [redacted] which before inundation controlled the outlet of the original



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The project study area lies within the [redacted] portion of the drainage basin in the [redacted] approximately 54 km (48.3 mi) above the confluence of the [redacted]

The [redacted] covers an area of 22,664 sq km (8,750 sq mi) and is the [redacted] largest drainage in New England, exceeded only by the [redacted]. The major rivers within the basin include the [redacted]. The basin is [redacted] wide at its widest point, with a maximum length of 125 miles and covers approximately one-quarter of the [redacted] (New England River Basins Commission 1981). The drainage originates in the Appalachian Uplands physiographic region and drains toward the southeast through the Seaboard Lowlands region. The [redacted]

Although it is difficult to precisely reconstruct the local environments in the project area prior to any dam construction, well-known author Henry D. Thoreau provides an early discussion of the general area in the 1850s. Brief extracts from his descriptions portray local environments in a more or less pristine condition, although some dams had already been constructed:

At the end of three miles, we reached [redacted]

...The [redacted] is a small, shallow, and sandy stream, full of what I took to be lamprey-eels' or suckers' nests, and lined with musquash [musk rat] cabins, but free from rapids, ... excepting at its outlet from the lake. ... Here our new batteau was to be carried over the first portage of two miles, round the Grand Falls of the Penobscot... The portage probably followed the trail of an ancient Indian carry round these falls. By two o'clock we, who had walked on before, reached the river above the falls, not far from the outlet of Quakish Lake... We were soon in the smooth water of Quakish Lake, and took our turns at rowing and paddling across it. It is a small, irregular, but handsome lake, shut in on all sides by the forest and showing no traces of man but some low boom in the distant cove, reserved for spring use. The spruce and cedar on its shores, hung with gray lichens, looked at a distance like the ghosts of trees... [redacted] appeared in the northwest, as if it were looking down on the lake especially... After two miles of smooth rowing across this lake,

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we found ourselves in the river again, which was a continuous rapid for one mile, to the dam... (Thoreau 1950:231,233,236).

Thoreau's account continues with a description of the dam and lakes above it:

The dam is a quite important and expensive work for this country... raising the whole river ten feet, and flooding, as they said, some sixty square miles by means of the innumerable lakes with which the river connects. It is a lofty and solid structure, with sloping piers, some distance above, made of frames of logs filled with stones, to break the ice... we decided to row five miles... to the head of North Twin Lake... After one mile of river, or what the boatmen call "thoroughfare" ---for the river becomes at length only the connecting link between the lakes--- and some slight rapid which had been mostly made smooth water by the dam, we entered [REDACTED] just after sundown, and steered across for the river "thoroughfare," four miles distant.

This is a noble sheet of water, where one may get the impression which a new country and a "lake of the woods" are fitted to create. There was the smoke of no log-hut nor camp of any kind to greet us...

We could distinguish the inlet to the [REDACTED] which is said to be the larger... The shores rose gently to ranges of low hills covered with forests...

The country is an archipelago of lakes--- the lake country of New England. Their levels vary but a few feet, and the boatmen, by short portages, or by none at all, pass easily from one to another.

They tell a story of a gang of experienced woodsmen sent to a location on this stream, who were thus lost in the wilderness of lakes... They carried into [REDACTED] which is on another stream, and is ten miles square, and contains a hundred islands. They explored its shores thoroughly, and then carried into another, and another, and it was a week of toil and anxiety before they found the Penobscot River again... (Thoreau 1950:236,239-241).

Thoreau's account also includes a description of the upper portions of the project area:

After poling up a half a mile of river, or thoroughfare, we rowed a mile across the foot of [REDACTED] which is the name given on the map to this whole chain of lakes, as if there was but one, though

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they are, in each instance, distinctly separated by a reach of the river, with its narrow and rocky channel and its rapids. This lake, which is one of the largest, stretched northwest ten miles, to hills and mountains in the distance... By another thoroughfare we passed into Deep Cove, a part of the same lake, which makes up two miles, toward the northeast, and rowing two miles across this, by another short thoroughfare, entered [REDACTED]

[REDACTED] struck me as the most beautiful lake we had seen. It is said to be one of the deepest. We had the fairest view of [REDACTED] from its surface... after leaving [REDACTED] we had a quarter of [REDACTED] of rapids to the portage, or carry of ninety rods around [REDACTED] then a mile and a half through [REDACTED] which is narrow and river-like, to the falls of the same name... (Coffin 1950:245,249-250).

Although it is difficult to precisely reconstruct the local environments around [REDACTED] prior to any dam construction, the earliest written description of the area was recorded in 1764 during an early survey of the [REDACTED] and nearby areas (Eckstorm 1925:84). This account is cited here (with some spelling and punctuation additions/substitutions):

[REDACTED] Very shallow water and a mud bottom, In most parts of this lake our canoes could not pass within a 100 rods of the shore by which we had not a good view of the shore and land; but the ground appears to be a dead level. Large tracts of grassland and at some distance backwards rising with an easy ascent grows a thick growth of young trees. Soil is a brown loam mixed with some large, round sand, but clear of stones. On the northerly branches of this lake are sundry tracts of intervale lands, and upwards in the [REDACTED] River for two miles are sundry small tracts of land for a settlement. Upwards on the [Penobscot] River for 20 or 30 miles the land is broken. Only some small tracts of good land (Joseph Chadwick 1764, reported in Eckstorm 1925:85).

Brief extracts from his descriptions further portray local environments in a more or less pristine condition, although the first dam had already been constructed at the outlet of [REDACTED]

The twenty miles of the [REDACTED] between [REDACTED] and [REDACTED] are comparatively smooth, and a great part dead-water, but from time to time it is shallow and rapid, with rocks or gravel beds where you can wade across. There is no expanse of water, and no break in the forest, and the meadow is a mere edging here and there. There are no

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hills near the river nor within sight, except one or two distant mountains seen in a few places. The banks are from six to ten feet high, but once or twice rise gently to higher ground. In many places the forest on the bank was but a thin strip, letting the light through from some alder swamp or meadow behind.

...We stopped to fish for trout at the mouth of a small stream called Ragmuff which came in from the west, about two miles below the Moosehorn. Here were the ruins of an old lumbering-camp, and a small space, which had formerly been cleared and burned over...

After passing through some long rips and by a large island, we reached an interesting part of the river called the [REDACTED] where the river expanded to thirty rods in width and had many islands in it; ...and we got our first sight of [REDACTED]

Here ...we turned up a small branch three or four rods wide, which comes in on the right from the south, called Pine Stream, to look for moose signs.

...we returned down [REDACTED] on our way to [REDACTED] which was about five miles distant... Just below the mouth of this stream were the most considerable rapids between the two lakes [REDACTED] called [REDACTED] where were large flat rocks washed smooth... Near the lake, which we were approaching ...were islands, and a low and meadowy shore with scattered trees ... There was considerable native grass ...

On entering the lake where the stream runs southeasterly, and for some time before, we had a view of the mountains about Ktaadn ...

The clearing to which we were bound was on the right side of the mouth of the river [modern day [REDACTED]], and was reached by going round a low point, where the water was shallow to a great distance from the shore. [REDACTED] extends northwest and southeast, and is about eighteen miles long and three wide without an island (Thoreau 1950; 71-72, 75-76, 90-91).

Thoreau's descriptions of the project study area also include mention of the [REDACTED] southern tributaries now known as [REDACTED] both of which have been altered by inundation:

We had designed to go on at evening up the [REDACTED] whose mouth was a mile or two distant to the lake of the same name, about ten miles

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off; but some Indians ... who were making canoes on the [redacted] came over from that side and gave so poor an account of the moose-hunting, so many had been killed there lately, that my companions concluded not to go there.

...we turned northward, up a broad kind of estuary and at its northeast corner found the [redacted] and after going about a mile from the lake, reached the Umbazooksus which comes in on the right at a point where the former river, coming from the west, turns short to the south. Our course was up the [redacted] but as the Indian knew of a good camping-place, that is, a cool place where there were few mosquitoes about half a mile further up the [redacted] we went thither. The latter stream, judging from the map, is the longer and principal stream ...

This river came from [redacted] about ten miles farther up. Though it was sluggish here, there were falls not far above us, and we saw the foam from them go by from time to time.

...we set out again, descending the [redacted] and turning northeasterly up the [redacted]. This name, the Indian said, meant Much Meadow River. We found it a very meadowy stream, and dead water, and now very wide on account of the rains, though, he said, it was sometimes quite narrow. The space between the woods, chiefly bare meadow, was from fifty to two hundred rods in breadth ...

A broad belt of dead larch-trees along the distant edge of the meadow, against the forest on each side, increased the usual wildness of the scenery. The Indian called these juniper, and said that they had been killed by the back-water caused by the dam at the outlet of Chesuncook Lake, some twenty miles distant.

Having paddled several miles up the Umbazooksus, it suddenly contracted to a mere brook, narrow and swift, the larches and other trees approaching the bank and leaving no open meadow ... (Thoreau 1950: 117-118, 120, 128).

There are four bedrock formations outcropping or underlying the [redacted]. The north and western [redacted] [redacted]

[redacted] (Devonian) (Osberg et al. 1985). The area around [redacted] is underlain by metamorphosed pelite of the Devonian Carabasset Formation. The area around [redacted] above the [redacted]

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[REDACTED] is underlain by metamorphosed calcareous sandstone, interbedded sandstone, and impure limestone of the Devonian to Silurian Madrid formation (Osberg et al. 1985). Immediately north of the outlet of [REDACTED] and to the northeast, a small portion of the project study area is underlain by the Ordovician Wassataquoik formation (Osberg et al. 1985). The [REDACTED] is potentially significant to archaeology since it is a chert and iron formation. In fact, it is possible that much of the chert present at archaeological sites within the project study area was derived from this formation. Bedrock units within the Ripogenus study area are composed largely of interbedded pelite and sandstone, with some mafic to felsic rocks and calcareous feldspathic sandstone. The ages represented include the Devonian, Silurian, Ordovician and Cambrian (Osberg et al. 1985).

Surficial deposits in the Penobscot Mills Project study area consist primarily of ribbed moraines (Thompson and Borns 1985). The hummocky ridged topography with numerous large glacial boulders was formed during or immediately after the Wisconsin glaciation (Thompson and Borns 1985). The low areas are typically infilled with Holocene swamp deposits (Genes 1981; Genes and Newman 1986). Other late Pleistocene or Holocene surficial geologic units such as glacial lake beach deposits, glacial stream deposits and stream alluvium are present in some areas (Genes 1981; Genes and Newman 1986). Surficial deposits within the Ripogenus area fit into several general types, all directly and indirectly a product of the Wisconsin glaciation and the subsequent reworking of these sediments during the Holocene epoch. These deposits include till, swamp marsh and bog deposits, differentiated and undifferentiated thin drift, glacial outwash deposits and alluvial sediments in a few limited areas along the tributaries and the West Branch Penobscot River (Thompson and Borns 1984). These latter sediments also apparently occur along Caucomgomoc Stream and in both cases are important because they provide the only setting in the project study area where stratified cultural deposits are predominantly present.

The climate of the broad region is typified by relatively long cold winters and mild summers. Average monthly temperature ranges from a monthly low of 11°C (52°F) to a high of 11.8°C (64°F) and averages 5.6°C (42°F) for the entire year. Annual precipitation averages 109 cm with 269 cm of snowfall (New England River Basins Commission 1981).

Modern biotic communities within the project study area fall into the Spruce-Fir-Northern Hardwoods vegetation zone. This zone is large and diverse with tree species varying between microenvironments. The dominant trees include several spruce and fir species, beech, yellow birch and sugar maple, or paper birch, aspen, and red maple. Other species include black, white, and red cedar, tamarack, white pine, black ash and cedar (Westveld et

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al. 1956).

Mammal species important to aboriginal populations and still present in the Penobscot River Basin include a variety of large mammals such as black bear, white-tailed deer and moose. Although no longer habitating the region, caribou were once an important species available to aboriginal populations. Fur-bearing species include fisher, marten, fox, coyote, bobcat and raccoon. Aquatic furbearers include beaver, muskrat, mink and otter. Other species include snowshoe hare, grouse and woodcock. Although dam construction and various forms of waste have altered the natural habitat, anadromous fish species once native to the Penobscot drainage, such as Atlantic salmon, shad, alewives, and sturgeon, were most likely important to the aboriginal populations in interior, noncoastal areas. Inland fish species available to aboriginal populations include landlocked salmon, lake trout (togue), brook trout and whitefish. In the smaller, warmer lakes and ponds these also include pickerel, smallmouth bass and perch. Reptiles may have also been important to the native populations, especially turtles, which have been identified in aboriginal features found within the Penobscot Mills Project study area. Birds which are native to the area include grouse, blue heron, loon, osprey, and various duck species. Bald eagles presently reside in Shad Pond area as they did when Henry David Thoreau visited in 1846 (New England River Basins Commission 1981; Thoreau 1987).

The evolutionary development of local and regional biota was undoubtedly of importance to human populations during the Holocene epoch and its transition from the Pleistocene. The sequence of vegetational change is based on microfossil data from a core taken nearby [REDACTED] located approximately 32 km (19.8 mi) [REDACTED]. The retreat of the Wisconsin ice sheet 12,500-12,000 years ago allowed the establishment of a moss and shrub tundra environment followed by a woodland forest cover (10,500-8800 years B.P.) consisting of spruce, paper birch, balsam fir, white pine and tamarack. Between ca. 8800-5600 B.P., this woodland forest was replaced by a largely coniferous forest composed of white pine, spruce, fir, poplar, birch, and red pine, with smaller amounts of tamarack, oak and ash. An abundance of hemlock and yew was also present during this period. A mixed hardwood and conifer forest followed from 5600 B.P. to present, with a drastic decline in the hemlock ca. 4800 B.P. and an increase in boreal conifers from ca. 1700 B.P. onward as climactic conditions became cooler and wetter. Substantial change has also occurred in the past 100 years as a result of lumbering and land clearing (Anderson et al. 1986).

E. Statement of Historic Contexts

Discuss each historic context listed in Section B.

The sites nominated with this Multiple Property form meet National Register eligibility criteria established in six different Contexts, which apply to different time periods of Maine prehistory. In chronological order they are: Paleoindian, Late Paleoindian, Early and Middle Archaic, Laurentian Tradition, Susquehanna Tradition, and Ceramic Period. Four of these six Contexts have been previously submitted to the National Register of Historic Places. The Paleoindian Context was submitted as part of the Maine Fluted Point Paleoindian Sites multiple property nomination in 1989. The other three contexts previously submitted to the National Register were submitted most recently as part of the Androscoggin River Drainage Prehistoric Sites Multiple Property nomination (N.R. 11/14/92): the Early and Middle Archaic, Susquehanna Tradition, and Ceramic Period contexts. There have not been any subsequent revisions to the four Contexts previous submitted in the interim.

In the Penobscot Headwaters Lakes nomination, we reproduce only the Evaluation sections from these four nominations. The Late Paleoindian and Laurentian Tradition Contexts are reproduced in their entirety.

What follows in chronological order in Section E and continuation sheets, therefore, are: Paleoindian Context Evaluation section, Late Paleoindian Context, Early and Middle Archaic Context Evaluation section, Laurentian Tradition Context, Susquehanna Tradition Context Evaluation section, and Ceramic Period Context Evaluation section.

FLUTED POINT PALEOINDIAN CONTEXT -- Eligibility Section

While all Paleoindian materials of known provenience are deemed valuable to a comprehensive understanding of Paleoindian use of the State, not all sites are considered worthy of National Register listing. The following criteria delineate the minimum requirements for National Register listing of Paleoindian sites:

1. The site will be firmly identified as Paleoindian by the presence of at least one morphologically diagnostic artifact, or by a suite of high quality lithic material that were not utilized by later inhabitants of Maine.
2. There must be evidence that the site was utilized either for habitation or for specialized activity. Findspots of isolated tools are not eligible unless there is unequivocal evidence that the locality was more than the site of random discard or loss of a tool.
3. The site will display integrity of the Paleoindian assemblage. The site will lack contamination of the lithic assemblage by later habitation, or the materials of later habitation must be easily segregated on the basis of vertical or horizontal separation of components or, at the least, by raw material.

Although not minimally necessary criteria for eligibility, the following factors will enhance the significance of a site:

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1. The presence of intact features such as hearths, post molds, and caches;
2. The presence of preserved organic remains, including bone, plant remains and charcoal; and/or
3. The presence of meaningful horizontal or vertical distribution patterns.

The Vail site and associated "killing ground" was listed in the National Register of Historic Places as an individual listing (January 23, 1980). The Fluted Point and Windy City sites (154.14, 154.16) are listed in the National Register (September 6, 1979) as contributing properties to the Chase Lake-Munsungun Lake Thoroughfare Archaeological District. The Lamoreau site has been nominated to the National Register accompanying the Fluted Point Paleoindian Multiple Property Listing. The Michaud site, Dam site and Atkins site have been completely excavated and are no longer eligible for listing in the National Register.

LATE PALEOINDIAN CONTEXT

Introduction

"Late Paleoindian" is a term applied across much of northern North America to assemblages containing spear point types considered to be successors to the fluted point. Late Paleoindian in Maine is defined by a series of point types and a parallel-oblique retouch flaking technique which may be present on some of these point types. Although these point types can possibly be dated between 10,200 and 9000 B.P., Late Paleoindian is not explicitly defined as a block of time.

On the High Plains the Paleoindian Period is characterized by lanceolate (some fluted) and stemmed point styles which date between roughly 11,500 B.P. (Clovis and Goshen) and 8000 B.P. (Frison 1991a: 23-79). The Early Plains Archaic is defined by the appearance of side-notched points. In the East, too, the dichotomy between early lanceolate and stemmed points versus side-notched or corner-notched points (necessarily predating 8000 B.P.) defines Late Paleoindian versus Early Archaic. The notches were at one time implicitly taken by archaeologists to indicate a new concept of hafting the point to its spear, and by extension a different style of hunting, economy, lifestyle, etc. While this basic assumption is questioned today, the terminological division between Paleoindian and Archaic continues in common use.

Recognition of a Late Paleoindian culture stage as distinct from fluted-point (early) Paleoindian seems to be a product of eastern archaeologists recognizing parallels with the Plains Paleoindian sequence that extended

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later than fluted points. As stated above, the most recent synthesis of High Plains prehistory (Frison 1991) does not split the Paleoindian tradition of lanceolate point use into distinct early and later subdivisions. Willey and Phillips (1958) early expressed exactly the problem that still haunts us today: close typological correspondence between some point styles in the northeast and the Plains late Paleoindian sequence. They first accept the unified Plains Paleoindian sequence (1958:88), as still used by Frison today, and discuss the relative timing of fluted point appearance in the west and east. Then, after pointing out that if there was any substantial delay in eastward movement of the fluted points from a western origin there would not be time to "jam in" late Paleoindian material before Early Archaic, they recognize the strong east-west typological parallels in the late Paleoindian sequence as well. For example: "Some of the point types that we have tentatively placed in an 'intermediate' category, especially Plainview, also have been reported widely in the East, but, since the forms are more generalized, the nature of the relationship to their western counterparts continues to be questionable. ... Parallel-flaked points of the Eden-Scotsbluff types are less often reported in the East. Their general distribution in North America seems to be more northerly than that of the earlier fluted-point types..." (Willey and Phillips 1958: 90). Other authors developed a shorthand term to apply to the late Paleoindian (originally Plainview) sequence on the plains: "Plano". Plano is used by Willey (1966:44) and Jennings (1968:95ff) in general reviews of North American prehistory, and as a western late Paleoindian referent by northeastern authors (Ritchie 1980, following his first edition 1969; Funk 1976:228-9). These same and other eastern authors (eg. Fitting et al 1966:135) use Late Paleoindian (or Late Paleo-Indian) in the similarly and occasionally interchangeably with Plano.

The Plains concept of a Paleoindian continuum, which has developed over the last 30 years or so, has been split into earlier and later portions when viewed from an eastern perspective. That view, perhaps, is due to the fact that influence of the Late Paleoindian continuum into the east is a phenomenon only of the Great Lakes, New England and the St. Lawrence area. The south (next paragraph) exhibits a different cultural sequence. The dichotomy of Paleoindian in the east, however, has been modified recently by recognition of a Paleoindian temporal sequence, which we shall also discuss below.

Throughout the south-central and southeastern United States, a transitional form between fluted points and side-notched points, called the Dalton point, clearly fills the chronological and stylistic gap between fluted points and the Early Archaic (Goodyear 1982). The lithic industry associated with notched and basally thinned Dalton points is clearly related to preceding Paleoindian technology (endscrapers and other typical uniface

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tools), but with the addition of flaked stone axes. Across northern North America, Late Paleoindian is less clearly a stylistic intermediary between its predecessor cultures and successor cultures than is Dalton. There is no evidence of Dalton material in southern New England or the Maine-Maritimes region. The first southern cultural influence to reach Maine is marked by occasional Kirk or Hardaway-like corner or side-notched points post-dating 9500 B.P., which we recognize and treat as "Early Archaic."

Throughout the period of popularity of fluted points, technological and stylistic innovations in point manufacture were geographically widely disseminated and adopted, for unknown reasons and by unknown mechanisms. For example, the earliest fluted points to appear on the Plains (Clovis) and in the Northeast (perhaps at the Shoop site in Pennsylvania, for example) were fluted without the aid of a nipple-base striking platform. The invention of a nipple-based striking platform spread nearly continent-wide (Folsom on the Plains, Parkhill in the Great Lakes, Bull Brook Phase in the Maine-Maritimes Region). This phenomenon of wide geographic dissemination of successive stylistic innovations continues over a large area (Plains, Great Lakes, New England-Maritimes) into the Late Paleoindian period. In the Great Lakes, the sequence of styles is: Gainey, Parkhill, Crowfield, Holcombe, Hi-Lo (review and references Spiess and Wilson 1987:47-52). Both Crowfield and Holcombe points appear in New England, notably at the Reagan site in Vermont (Ritchie 1953: Figure 89, numbers 6, 7, 11, 12, 84, and numbers 20, 21, 27, 28). On the northern high plains, the sequence of point styles is: Agate Basin, Hell Gap, Alberta, Cody Complex (including Eden and Scottsbluff points), and parallel/oblique flaked points beginning with the Frederick Complex (Frison 1978). These Plains (or Plano) style Late Paleoindian points are widespread across northern North America, from northeastern British Columbia (Wilson 1989), to the Northwest Territories (Stewart 1991), the upper Great Lakes (Mason 1981), Ontario (Stewart 1983), eastern Quebec (Dumais and Rousseau 1985, with references) Massachusetts and Nova Scotia (Davis 1988). A number of these point styles, particularly the Agate Basin and Eden/Scottsbluff, have clear stylistic parallels in the Late Paleoindian points from the upper Great Lakes and New England, including Maine (Doyle et al 1985).

It is clear that at least one set of cultural influences was moving west-to-east across what is now the northern United States and southern Canada, into the Northeast. There is also a local Maine-Maritimes regional development of a basally thinned, triangular Late Paleoindian point (Doyle et al. 1985: Figures 4 and 5; Keenlyside 1985) which deserves much greater research attention.

The millennium between 10,000 and 9000 B.P., which most likely is the age of most of the Late Paleoindian material in Maine, witnessed the final establishment of a closed mixed forest across Maine. A spruce-oak

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association was replaced with a pine-birch-oak association around Gould Pond near Bangor, for example; and the high rate of vegetation change that had characterized the preceding millennium was replaced by relative stability by 9000 B.P. (Jacobson et al 1987). At Mirror Lake, at 200 m elevation in the White Mountains, a fir-poplar-birch dominated forest characterized the millennium. Spruce had declined around 10,000 B.P., and pine did not increase dramatically until about 9,000 B.P. (Davis et al. 1980). Many small postglacial lakes were vegetated with aquatic plants, but had not yet begun significant infilling as bogs (Gajewski 1987). Relative sea level along the coast of the Gulf of Maine was much different than today, due primarily to isostatic (postglacial) depression and subsequent rebound of the land. Maximum postglacial rebound of the land had occurred about 10,500 B.P. (Oldale 1985). The land has submerged since, such that the coastline of about 9100 B.P. is now under 20 meters (65 feet) of water (Anonymous 1991).

All Late Paleoindian sites that might have been oriented toward the coast or tidal estuaries are now underwater. Moreover, the Gulf of Maine was less tidal (lower tidal amplitude), with pockets of significantly warmer surface water inshore and in estuaries marked by high biological productivity in coastal upwelling (Schnitker and Jorgensen 1990) and a warm-temperate coastal fauna (McAlicie 1981), probably including a significant oyster population.

Radiocarbon dates on Late Paleoindian occupations, or even isolated artifacts are rare in the northeast. Little has changed since the most recent review (Doyle et al. 1985:11-12). The only directly dated association from New England is the basal component at the Weirs Beach site, dated 9615±225 B.P. (Bolian 1980:124). Doyle et al. conclude that Late Paleoindian occupations in Maine most likely date to the millennium between 10,000 and 9000 B.P. A few more recent dates provide termini ante quem, such as several dates averaging 8000 B.P. from a buried soil surface at the Blackman Stream site which overlies a Late Paleoindian point (Belcher and Sanger 1988).

Dates for the stylistically similar points from the Plains may be more instructive. Agate Basin levels at the Agate Basin site and elsewhere date between 9300 and 10,400 B.P. with large standard errors (Frison and Stanford 1982:178; Frison 1991:26). Multiple radiocarbon dates on Hell Gap assemblages from the Casper site date 10,014 B.P. on average (Frison 1974), with dates of around 9600 at the Sutter's Hill site (Frison 1991:26). The best dates on Alberta and Cody Complex occupations at the Horner site range from 9390±75 to 10060±220 B.P. (Frison and Todd 1987:98). Some other dates on the Cody Complex fall around 8750 to 8800 B.P. (Frison 1991). Unless there are some substantial time lags in transmission of stylistic ideas between the Plains and the Northeast, then a range of dates between 10,200 and 9000 B.P.

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seems logical for Late Paleoindian in Maine.

General research interest in Late Paleoindian in Maine has concentrated in three areas: 1) recognizing the diagnostic projectile point types and associated assemblages, 2) estimating their age (as discussed above), and 3) their geographic distribution (eg. Spiess et al. 1983, Doyle et al. 1985). No substantial advance on these questions, or other questions of adaptation and lifeway, can be made until some Late Paleoindian components are isolated and found in association with organic material. Finally, many northeastern archaeologists believe that Late Paleoindian cultural material is at least partly contemporary with material that is termed Early Archaic (Doyle et al 1985:13). The recent proliferation of radiocarbon dated levels older than 8000 B.P. from deeply stratified sites in Maine and northern New England has not been accompanied by recovery of any number of traditional "diagnostic" Early Archaic or Late Paleoindian artifacts. The research, therefore, is at the most basic level of attempting to build chronology and define culture units.

Identification

During the early 1980's avocational archaeologist Richard Doyle, Jr. brought the presence of Late Paleoindian style points to the attention of several professional archaeologists (Spiess et al. 1983, Hamilton et al. 1984, Doyle et al. 1985). Two systematic collections-based surveys were the result.

Spiess et al. (1983) focussed on Early and Middle Archaic material, but did notice that lacustrine-oriented sites that yielded mostly Early and Middle Archaic material also contained a few diagnostic Late Paleoindian artifacts. This work reported six sites with Late Paleoindian material, and commented on the congruity between Late Paleoindian and Early Archaic use of lacustrine environments and possible chronological overlap. Doyle et al. (1985) subsequently prepared a full report of Late Paleoindian material from nine sites in Maine, careful typological description of several diagnostic point types, and comparison with other Late Paleoindian material in the Northeast. The sites they reported include four in the upper

There have not been further systematic surveys for Late Paleoindian material, so Doyle et al. (1985) becomes the starting point for further discussion of most topics related to Maine Late Paleoindian.

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Since these two professional surveys, diagnostic Late Paleoindian material has been discovered during work at sites with multiple components. A single midsection of a Late Paleoindian biface was found in the Schofield collection from site 123.6 at Mattawamkeag (Bourque et al 1985). Single Late Paleoindian points have been recovered from the Brockway site (90.3, a parallel flaked point base [Bartone et al. 1988]), and from site 53.38 in Waterville, (a probable Agate Basin point distal fragment [Spiess et al. 1990]). Two possible Agate Basin-like bifaces were recovered by commercial fishermen during dragging operations from a landform at 60 meters depth near Green Island (Sanger 1988:88 for a description, cultural attribution here is Spiess' responsibility). A similar red chert biface was recovered from the eroded surface of site 122.17 on Millinocket Lake (Nelson et al. 1990).

Stratified contexts for Late Paleoindian material are rare in Maine. An excurvate-lanceolate point (following Doyle et al. 1985) or Agate Basin-like point made of chert was recovered, accompanied by 13 felsite flakes, from a stratum of silt and clay at 2.17 meters depth in the Blackman Stream site (74.19). This level is 1 meter below a buried land surface with multiple radiocarbon dates averaging 8000 B.P. (Belcher and Sanger 1988). Two other well-stratified sites, in the Milo area on the Piscataquis River, have yielded prehistoric occupation levels of Late Paleoindian age but no diagnostic artifacts. The basal level at the Brigham site (90.2c) has been radiocarbon dated 10,290±460 B.P., associated with an assemblage of quartz and felsite flakes. The basal Feature 40 at the Sharrow site has yielded calcined bone and debitage associated with multiple radiocarbon dates averaging 9000 B.P. (Petersen 1991). Site 7.7 on the Saco River has yielded two features which date 9350±90 B.P. or older (Cowie and Petersen 1990).

Curiously, a classic Late Paleoindian parallel-flaked lanceolate projectile point, analogous to the Plains Eden point (Doyle et al. 1985:32), was recovered from within a highly localized concentration of fluted points interpreted as a kill site (Gramly 1984) associated with the Vail site (Gramly 1982) on Aziscohos Lake.

Finally, in 1991, two possible (sites 3.5 and 7.35) single component Late Paleoindian occupations were identified during power line right-of-way survey in southern Maine (Mosher et al. 1991). The sites are located on well-drained, sandy landforms overlooking small streams and marshes. Although neither site has yielded a diagnostic biface, the site 3.5 assemblage contains many small, parallel sided biface trimming flakes in a mixture of chert, argillite, rhyolite and quartz debitage.

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Research Significance Themes

Theme 1, Culture History

This theme engenders two types of related research. The most basic is exploration of the details of succession of tool types and artifacts in the archaeological record. The related theme is the tracing of the ethnohistory, and ancestry, of specific Native American groups back into prehistory.

In order to explore culture history, archaeologists must have multiple example of well dated archaeological components, each representing a limited period of time. This type of data base is entirely lacking for Late Paleoindian in Maine, and generally poor throughout the Northeast. The Weirs Beach, New Hampshire, Late Paleoindian component is the only one in northern New England with a "believable" radiocarbon date between 10,000 and 8,000 B.P. The Blackman Stream site in Maine has confirmed the presence of excurvate lanceolate points some time before 8000 B.P. Neither are there any stratified sites with two superimposed Late Paleoindian components, or with diagnostic artifacts in superimposed strata that demonstrably date to the Late Paleoindian or initial Early Archaic. We are, therefore, at present limited to typological analyses and external comparisons for temporal control.

The preceding fluted point Paleoindian period is not the undifferentiated, continent wide cultural manifestation it once appeared to be. Broadly regionalized fluted point styles can be recognized after initial spread of the Clovis (*sensu stricto*, not meaning all fluted points) type. In the Great Lakes States terminal fluted point styles include Crowfield-like points, and are followed by a series generally smaller, poorly fluted or basally thinned points similar to the series from the Holcombe site. In the Great Lakes, Holcombe-like points are succeeded by slightly stemmed Hi-Lo points. In Maine and the Maritimes Provinces they are succeeded by poorly fluted or just basally-thinned triangles (eg. Doyle et al 1985:24, Keenlyside 1985). Thus, one tradition (a sequence of gradual style changes) in Maine included a regionally-derived, often generally nondescript triangular style.

In the mid-Atlantic states and mid-south, terminal fluted point styles were succeeded by slightly stemmed (or eared), basally thinned Dalton points (between 10,500 and 9,900 B.P., Goodyear 1982). Dalton points are succeeded by basally stemmed and notched points, generally classified as "Early Archaic", before 9500 B.P. A few examples of these early Early Archaic points do appear in Maine (Spiess et al 1983). Some of these points are made on local lithics (generally felsite), but many are made on exotic lithics. They represent both imported objects and imported ideas, and thus are a "second" cultural influence on the Late Paleoindian period in Maine. We

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have, of course, not yet demonstrated contemporaneity between these Early Archaic objects in Maine and an otherwise "Late Paleoindian" assemblage, but the out-of-state analogous point styles appear to be contemporary.

There is a third tradition or cultural influence on the Late Paleoindian period in Maine. Many archaeologists acknowledge the contemporaneity or dual influence of Early Archaic and a generalized Late Paleoindian cultural tradition in northern New England; here we are making the point that there is a third cultural tradition involved, also called Late Paleoindian, ultimately derived from the northern Plains. The sequence and chronology of northern Plains Late Paleoindian point styles is relatively clear, at least compared with the Northeast. Points very similar in style to northern Plains Late Paleoindian styles appear at least twice, if not thrice, in the northern New England Late Paleoindian. These stylistic parallels relate to the Agate Basin and/or Hell Gap styles (one, or two separate sequential influences) dating within a few centuries of 10,000 B.P. (present as the excurvate lanceolate point of Doyle et al. 1985), and an Alberta/Cody I complex Eden point (Frison and Todd 1987:214-217) style dating between 9,800 and 8800 B.P. (ibid:98, 104-105) (present as the parallel based lanceolate point of Doyle et al. 1985). Scottsbluff and Eden points virtually identical to those that appear in Wyoming also have been found in Wisconsin (Mason 1981:118-122), which provides a geographically intermediate point along a route from the northern Plains, through the Great Lakes states, to northern New England and the Maritimes Provinces.

Whatever the cultural dynamics and population levels of the time, there was enough cultural "space" in Maine for a locally derived and two imported series of stylistic ideas on how to manufacture stone points. One source of ideas was a west-east flow from the Plains across the Great Lakes and into the Northeast. Another source apparently was a south-north flow from the mid-Atlantic or mid-south; we just happen to designate it "Early Archaic" because of the notched points involved and a convention in naming.

Theme 2: Settlement Pattern

The settlement pattern theme includes the study of geographic variability or spatial patterning on a continuum of scale. At the largest scale, we investigate the presence of a particular culture in large areas of the state. At a smaller scale, we correlate the presence of occupations with certain geographic attributes, such as landforms or nearest water type. At the smallest scale, we investigate internal site patterning, including activity areas, patterns that might indicate domestic structures, and so forth.

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Diagnostic Late Paleoindian points, at least those that can be identified as northern Plains stylistic parallels, occur in all corners of the state.

The locally-derived triangular point tradition is recognized at [redacted] (Doyle et al. 1985), and in the Maritime Provinces adjacent to the north (Keelyside 1985). We must consider the sample of the triangular points incomplete because these basally thinned triangular points are much more difficult to differentiate from later triangular points than are the northern Plains analogue styles from the mass of Maine prehistoric materials.

There are no Late Paleoindian sites that have yet yielded meaningful intrasite patterning data that can be used to study the finest scale of settlement pattern: activity areas within a site (although site 3.5 holds the potential for yielding the first such data). Therefore, the rest of this discussion of settlement patterns focusses upon correlations with landform attributes.

Spieß et al. (1983) found that Late Paleoindian points occur on sites with diagnostic Early Archaic, and often much more intense Middle Archaic, occupations on lakes. These lacustrine occupations often concentrate near lake inlets and outlets, and along thoroughfares (short interlacustrine river flowages) between lakes. In 1983 Spieß et al. speculated, but could not be definitive, about Early Holocene use of Maine's major rivers. The discovery of several sites with deeply stratified Late Paleoindian occupations along our major rivers in the last decade has demonstrated Late Paleoindian use of the major rivers, often at sites with later Early and Middle Archaic occupations as well. In fact, the interior archaeological record seemingly indicates a high correlation in site location between Late Paleoindian, Early Archaic, and Middle Archaic occupations. Late Paleoindian settlement, and therefore economic adaptation, was at least in part focussed on lakes and rivers as has been most subsequent settlement in Maine (although with variations in theme). There is a clear contrast with the fluted-point Paleoindian settlement pattern that focussed on well-drained sandy terrain away from river and lakes (Spieß and Wilson 1985). A similar shift to stream and pond borders, and away from non-waterway-oriented sandy locations, has been noticed for the Paleoindian to Late Paleoindian and Early Archaic in portions of the upper Great Lakes (Jackson 1990:136).

What I believe are probable Late Paleoindian pieces from 60 meters' water depth off [redacted] (Sanger 1988) indicate an lower-estuarine-river or marine-coastal component to the Late Paleoindian settlement pattern, also. Again, this pattern parallels the Early and Middle Archaic pattern along the

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coast (Spiess et al 1983). Triangular Late Paleoindian points in the Maritime Provinces are known from Prince Edward Island (Keenlyside 1985) and the Magdalen Islands in the Gulf of St. Lawrence (McCaffrey 1986). In the latter case at least, it is likely that a sea mammal (perhaps walrus) hunting economy was involved, and competent boat transportation to deal with the open waters of the Gulf was a prerequisite. The one Late Paleoindian triangular point for Maine comes from an interior lake inlet/outlet/thoroughfare location again similar to Early and Middle Archaic material.

The Northeast parallel sided (Eden-like) point from the Vail killing ground #1 site is an intriguing hint that Late Paleoindian settlement pattern is more than just the initiation of the Early and Middle Archaic settlement pattern (whatever that was). The discovery of site 3.5 in Sanford (southwestern Maine) during 1991, however, has complicated the question of Late Paleoindian settlement patterns. The site is on a distinctly sandy, well drained valley-side landform overlooking the swampy headwaters of a small drainage. This location is remarkably reminiscent of the Michaud site location (Spiess and Wilson 1987). Perhaps it was the swamp that attracted people to this location, analogous to a postulated Early Holocene wetlands-oriented settlement pattern postulated for southern New England (Nicholas 1988). Alternatively, some aspect of the Late Paleoindian settlement pattern was intermediate between the preceding fluted point Paleoindian use of well-drained sandy soils away from water, and the succeeding Early and Middle Archaic use of lakes and rivers.

Theme 3: Subsistence Patterns

There are no faunal or floral remains that are associated with a Late Paleoindian component in Maine, nor at any site in the Northeast that we are aware. Speculation about subsistence patterns, therefore, must be based entirely upon observed settlement pattern. A focus on lacustrine resources seems indicated by the lake inlet/outlet/thoroughfare settlement focus which characterizes Late Paleoindian, Early and Middle Archaic periods. Later lacustrine settlement patterns are more dispersed around the lakeshore. Perhaps the Late Paleoindian, Early and Middle Archaic lacustrine settlement was more dependent upon resources available at lake inlets and outlets, such as seasonal shallow-water spawning lake fish harvested with nets or weirs. Habitation along the banks of large and medium rivers could indicate use of anadromous fish runs. The nature of coastal zone use in the Gulf of Maine is at present, unknown.

Theme 4: Mortuary Practices

There are no known Late Paleoindian mortuary sites from Maine. However, if we look outside of Maine and outside New England, we can predict what

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attributes they might have when found. The Crowfield site in southern Ontario consists of two concentrations of (more than one hundred) stone tools that had been cremated prior to interment (Deller and Ellis 1984). Although no bone or red ocher was associated, the authors interpret the features as probable interments. Two Late Paleoindian (Cody Complex) cremation interments (the Renier and Pope sites) containing calcined bone and many burned stone tools represent definitive evidence of Late Paleoindian cremation mortuary behavior in Wisconsin (Mason 1981:117-120). Thus, Late Paleoindian mortuary behavior in Maine may have included secondary interment of cremated human remains and the burned fragments of many functional but well-made stone tools.

Theme 5: Transportation, Travel, Trade and Commerce

In the absence of a site with organic preservation, and using an archaeological record based entirely upon diagnostic lithic materials, we must explore this topic based upon where the stone objects were found (site location) and where they originated (lithic outcrop or availability in glacial drift). In the settlement pattern theme above, we have already commented that Late Paleoindian sites are found in locations near lake inlets, outlets and thoroughfares and in alluvial deposits along rivers that also yield much of the Early and Middle Archaic material known in Maine. It is probable that the birch bark canoe was perfected during the Susquehanna Tradition or later (see Susquehanna and Ceramic Period Contexts), and that Early and Middle Archaic transportation was based upon heavier, less maneuverable watercraft, probably dugout canoes. Above we have commented that Late Paleoindian site locations have shifted toward a focus on waterways and away from the water-independent fluted-point Paleoindian settlement pattern. We hypothesize, therefore, that the use of dugout canoes or some similar heavy watercraft was widely adopted during the Late Paleoindian period.

The fluted point Paleoindian tool kit in Maine is dominated by use of high quality cherts, silicified glassy tuff (Neponset "rhyolite"), crystal quartz, agate, and jasper, all brightly colored and highly silicified material. In contrast, Late Paleoindian Plains-analogue points are primarily made of argillite (a silicified mudstone or siltstone with larger grain size and duller luster than most "chert"), cherts of relatively dull lustre and color, and Kineo rhyolite (Doyle et al 1985). If the entire lithic assemblage from site 3.5 is Late Paleoindian in age, then polycrystalline (white, opaque to semitranslucent or "bull") quartz can be added to the lithic materials list. The triangular point from Seboomook Lake is Saugus rhyolite (Doyle et al. 1985), a material from eastern Massachusetts used in small amounts by fluted point Paleoindians also. The wide-ranging system (whatever it was) for lithic procurement during fluted point Paleoindian

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occupation was replaced by a different system or standard.

Little work has been done on argillite characterization in Maine. However, the northern Maine Ordovician geological beds that yield higher-grade cherts (such as Munsungun chert) are interbedded with less highly silicified mudstones and slates (i.e., Pollock 1987). A light-brown argillite (or poorly silicified chert) outcrop, site 165.1, which showed evidence of prehistoric quarrying, has been located in northern Maine (Nicholas 1981). It is probable that intensive survey work at quarry sites in northern Maine will locate late Paleoindian-age activity areas.

Theme 6: Social and Political Organization

No Late Paleoindian site has yet been excavated that has yielded internal patterning of activity areas or possible structures, although site 3.5 has the potential to yield such data. At most, because of this lack of data, we can simply contrast the Late Paleoindian archaeological record with the fluted point Paleoindian record. The latter has yielded several sites in New England containing large numbers of discrete loci in evident short-term occupations (Spiess 1984, Spiess and Wilson 1987). No such Late Paleoindian sites are known.

Theme 7, Laboratory and Field Techniques

No laboratory or field studies specifically oriented toward Late Paleoindian sites have yet been developed. However, the primarily Late Paleoindian reliance on argillites and dull-lustre cherts suggests geological characterization of these materials through thin section and other techniques, followed by an attempt to locate and study outcrops and quarries.

Theme 8, Anthropological Archaeology

No information available.

Theme 9: Human Biology

There are no Late Paleoindian human remains known from Maine, or from the Northeast as a whole.

Theme 10: Environmental Studies

The basal alluvial deposits in deeply stratified sites such as the Blackman Stream and Brigham sites contain Late Paleoindian age material. Sedimentological studies at these sites might produce more information about

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river dynamics and drainage systems of the time. Extensive excavation in these deposits may yield collections of charcoal which will indicate something about local forest composition.

Theme 11: Non-Mortuary Religious Practices

The poor archaeological record limits the possibility of investigating this topic. However, eight talc (sic, ?soapstone) pendants reported from the Reagan site in Vermont (Ritchie 1953) might be relevant. At least one (ibid: Figure 89:14) is decorated with linear designs.

Theme 12: Cultural Boundaries

Is the concept of cultural boundary as manifested in material culture at all relevant during this time period? Are we dealing with a succession of small groups using Maine at very light population density? Did they (in turn, or episodically) derive their material culture from a local terminal Paleoindian tradition, influences from the northern Plains transmitted through the Great Lakes, and from the southeast? Or was there a local population that adopted several prevailing standards of manufacturing stone tools and other material culture, or borrowed ideas from multiple sources? We should note that the succeeding Early and Middle Archaic period is characterized by rare use of lithic material to make diagnostic points, at least for most of the period over most of the State (Robinson et al. 1992). Cultural events during the Late Paleoindian period must have been fundamental to developing that adaptation.

Evaluation

Currently research in the Late Paleoindian period is at a basic survey level: attempts to locate and identify sites where Late Paleoindian materials remain in primary context and/or attempts to identify single-component Late Paleoindian sites. Until these efforts are successful multiple times, we will not know the range of lithic material culture that can be associated with the Late Paleoindian. All other research questions are dependent first upon success in basic survey.

National Register Eligibility Criteria

The following criteria delineate the minimum requirements for National Register listing of Late Paleoindian sites:

1. The site will be identified as Late Paleoindian by the presence of at least one morphologically diagnostic artifact; and

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2. there must be evidence that the site was utilized either for habitation or for "specialized" activity, including tool maintenance and production, kill and butchery of an animal, etc. Findspots of isolated tools are not eligible unless there is unequivocal evidence that the locality was more than the location of random discard or loss of a tool.
3. The site need not display uneroded or undisturbed primary archaeological context. However, the site will lack contamination of the lithic assemblage by later habitation, or the materials of later habitation must be easily segregated on the basis of raw material, and/or vertical and/or horizontal separation.

Mortuary components clearly identifiable to the period are eligible under the same criteria. Moreover, any site with a Late Paleoindian component that is demonstrably able to make an extraordinary contribution to any of the Research Significance Themes presented above is significant.

Protection

All Late Paleoindian coastal site locations are now under the waters of the [REDACTED] due to coastal subsidence and eustatic sea level rise of 50 to 60 meters. It is conceivable that single component lithic scatters have survived erosion and remain accessible on the bottom of the [REDACTED] in places where they have not been buried by soft sediment. Should such sites exist, it is impractical to protect them from the disturbances caused by inshore commercial fishing (principally dragging). Systematic data recovery by diving is the favored response.

Many interior lakeshore sites have Late Paleoindian components. These are often eroded, and the diagnostic stone artifacts mixed with later material. Therefore, few of these sites are eligible solely because of their Late Paleoindian components. Because water level is controlled artificially on most Maine lakes, the sites are periodically (seasonally during low water, or once in several decades as dams are repaired) accessible to artifact collectors. Inventory of private artifact collections is the major practical method of data recovery in most cases, although a few sites may be especially suited to physical and legal protection.

Many eligible Late Paleoindian components in Maine are located in deeply (2 to 3 meters) stratified alluvial silts and sands along major and medium-sized rivers. The primary threat to these sites is ongoing erosion of the margins of impoundments created by hydroelectric dams. Most of these localities will be inventoried in the next two decades or so as part of hydroelectric licensing studies. Physical protection of these sites by erosion control methods has proven prohibitively costly when that option has

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been investigated. The protection method of choice, therefore, includes data recovery from a portion of the site that may erode during the term of the license, accompanied by National Register listing and legal protection, and site monitoring for the remaining portion of the site.

Some Late Paleoindian sites are located on well-drained, sandy soils in shallowly buried contexts. These soils are subject to deflation once they are devegetated, and the prehistoric stone debitage and tools may be easily visible against the sandy matrix if the thin organic horizon on the soil is disturbed by vehicular traffic. Once found and reported to the professional community, the best protection for such sites is extreme security of site location information. Since the stratigraphic situation of such sites is usually uncomplicated, and the high research potential of any relatively intact Late Paleoindian site is at risk to unauthorized collectors, controlled data recovery is the prudent course whenever possible. If excavation of the total site is not possible, a combination of monitoring, collecting prehistoric material exposed on the surface, National Register nomination and other legal protection, and physical protection is appropriate.

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EARLY AND MIDDLE ARCHAIC CONTEXT -- Evaluation Section

National Register Eligibility Criteria.

For a site to be eligible for listing in the National Register of Historic Places because of one or more significant Early and Middle Archaic component(s), it must contain at least one component containing stone tools, debitage, features, floral subsistence, and/or faunal remains that can be certainly identified as deriving from the Early and Middle Archaic. That identification may be based upon a diagnostic biface type, which is the traditional method of identifying "culture" in Northeastern prehistory. However, because the Gulf of Maine Archaic minimized use of stone bifaces, component identification may also be based upon other material culture attributes (which include ground stone or quartz uniface tool types and/or a suite of lithic raw material as evidenced by debitage) and a chronological date based upon association with a radiocarbon dated feature or a relative date on a stratum in a sealed alluvial context. The component identified as Early and Middle Archaic must be clearly separable from other components on the basis of horizontal patterning or vertical stratigraphy. Mortuary components clearly identifiable to the period are eligible under the same criteria. Moreover, any site with an Early and Middle Archaic component that is demonstrably able to make an extraordinary contribution to any of the Research Significance Themes presented above is significant.

Because of the general scarcity of diagnostic bifaces for the Early and Middle Archaic, the primary factor in judging National Register eligibility must be component purity and component identifiability to the Early and Middle Archaic. Maine Archaeological Survey computerized records indicate that approximately 70 Maine sites currently are known to contain (an) Early and Middle Archaic component(s). Approximately half of these sites are eroded lake-shore locations yielding biface or ground stone types diagnostic of the period. At least a dozen sites contain Early and Middle Archaic components in well-stratified alluvial context, however.

LAURENTIAN TRADITION CONTEXT

Introduction

The Laurentian Tradition (as used herein) begins at 6000 B.P., at a chronologically arbitrary division with the preceding Middle Archaic period. The Laurentian Tradition shares many items of material culture with at least

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some Maine Middle Archaic and Early Archaic components, so it must represent a relatively long, in situ cultural tradition. During the Laurentian Tradition occupation, most of Maine was covered by a mixed coniferous-deciduous forest, which with the exception of one event exhibits remarkably low rates of vegetation change (eg. Jacobson et al. 1987). At Gould Pond in central Maine, pine frequency had declined and fir had appeared before 6000 B.P. Oak and beech were plentiful, spruce was virtually absent circa 5000 B.P. Pollen records from western Maine and southern New England indicate that the period from 9000 B.P. to about 5000 B.P. was warmer (about 2°C average annual temperature) and drier (about 400 mm less average rainfall) than today (Davis et al 1980). After 5000 B.P. the climate began to cool. One dramatic vegetational event does mark the pollen record: a rapid and dramatic decline in hemlock at about 5000 B.P. followed by a dramatic increase in birch pollen. This event is interpreted as a disease episode which killed hemlock and allowed birch to grow in the openings created in the forest.

The [redacted] was characterized by generally warmer surface water and much lower tidal amplitude than today circa 6000 B.P. Tidal amplitude began increasing circa 6000 B.P., but apparently did not effect the inshore ecology greatly until after the close of the Laurentian Tradition. Relative sea level was rising (actually, the land was subsiding). A recently developed relative sea level curve (Belknap et al 1989) gives the following relative sea levels: at 6000 B.P. -12 meters, at 5000 B.P. -7 meters, and at 4000 B.P. -4 meters. Rates of sea level rise approximated 25 cm per 50 years (a "lifetime") between 6000 and 5000 B.P. and 17 cm per 50 years between 5000 and 4000 B.P. Thus, the relative rise of sea level, and minor changes to shoreline, would have been noticeable to people alive at the time. A number of major falls on Maine's rivers that have now been drowned, such as at The Chops on the Kennebec, were above the tide at 6000 B.P. and probably reduced anadromous fish access to the rivers. The Chops in particular may have been drowned (becoming for a while a reversing falls) during the period between 6000 and 4500 B.P.

Laurentian Tradition material culture was originally broadly defined to include stone points of one or more types (Otter Creek, Vosburg, Brewerton), adzes, choppers, plummets, gouges, ulus (semi-lunar ground slate knives), endscrapers, stone rods and other abraders, and barbed bone points (Ritchie 1969). Producing a workable definition of the Laurentian Tradition, and understanding geographic and chronological variability across the Northeast, has consumed most of the attempts at synthesis to date. Recently, several Vergennes Phase Laurentian Tradition components have been isolated in Maine, allowing a clearer picture of culture content, relationships and adaptation for the Vergennes Phase. However, we are still debating the broader geographic relationships across New England and New York, and the problems of

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cultural antecedents in the Middle Archaic and cultural successors in the Late Archaic.

The Laurentian Tradition adaptation usually has been described as a general hunter-fisher-gatherer life-way along the rivers and lakes in the mixed forest of northern New York and New England. Vergennes Phase components of the Laurentian Tradition tend to be located in rather swampy places along streams and lakes in Vermont and Maine (Cox 1991), but that fact may be due to an increase in average rainfall since occupation rather than a particular adaptation to swamps. A couple of recent discoveries in Maine have raised questions about horticulture and maritime hunting capability during the Laurentian Tradition.

Definition of Laurentian Tradition in Maine

William Ritchie originally (1938, Funk 1988: 5-6) proposed the Laurentian Aspect as a name for three apparently related regional Late Archaic cultures in New York and Vermont: Brewerton, Vergennes, and Vosburg. He also indicated the relatedness of a culture discovered at Blue Hill, Maine (now Moorehead Phase), and raised the issue of relatedness with the Old Stone Culture of Labrador (now Maritime Archaic). Thus, the original definition of "Laurentian" was inclusive, an early recognition of widespread similarities among local manifestations of early Late Archaic culture in the far Northeast. Subsequently, archaeologists working in southern New England have recognized that some Laurentian Tradition artifact types (certain Brewerton point types, ulus, plummets) appear often with small stemmed points. The Duck Bay Phase in Connecticut (Funk 1988) is an assemblage with Brewerton points but without small-stemmed points. Dincauze (1975:26) points out that Brewerton Eared points are distributed across southern New England westward into New York, where they are gradually replaced by Brewerton side-notched and corner-notched forms. Vosburg points occur west and southwest of New England as far as Pennsylvania. Some material culture similarities between the Laurentian Tradition and the Old Copper Culture in the upper Great Lakes are also demonstrable (Mason 1981).

The Late Archaic between 6000 and roughly 4000 B.P. across the Northeast was not characterized by sharp cultural boundaries, nor was it characterized by rapid expansion of one culture over a wide geographic area. Instead, the material culture pattern is one of overlapping, non-congruent distributions of tool types (and ideas) in geographic space and perhaps in time (eg. Otter Creek points tend to predate some Brewerton point types). The result is unique associations of artifact types within smaller subdivisions of time and space, all obviously related. Archaeologists have struggled, and will continue to struggle, with the appropriate scale in applying names to this diversity of associations. Byers (1959) recognized the broad regional

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relatedness in his Boreal Forest Archaic terminology, and Snow (1980) does the same with his Maritime Archaic, Lake Forest Archaic, and Mast Forest Archaic concept. The term "Laurentian Tradition", broadly applied, does the same: "The Laurentian may perhaps best be regarded as an extensive Archaic cultural continuum, widely spread throughout northeastern North America, with its major area of development and diffusion within southeastern Ontario, southern Quebec, northern New England, and northern New York" (Ritchie 1965:79)."

Although Brewerton point styles were part of the original definition of "Laurentian", and they are plentiful in southern New England, Dincauze (1975:26) recommends discontinuing use of the term Laurentian in southern New England. Brewerton and Vosburg points (and some points typed as "Otter Creek" points) are found at the Neville site stratified just above an occupation surface dated 5910±180 (GX-1748) and 6060±30 (GX-1921) (Dincauze 1976:91, 103). Although some authors argue for a basic north/south dichotomy between the Vergennes Phase and assemblages containing Brewerton points, Brewerton points appear in numbers at Point du Buisson 4 and 5 sites (Clermont and Chapdelaine 1982, Plourde 1987) just north of the Lake Champlain drainage. A clearly Vergennes-phase related occupation occurs on the north shore of the St. Lawrence east of Tadoussac (Archambault 1987:108-110), and there is an enigmatic series of burials with a rich bone tool assemblage dating between 6660 B.P. and 4690 B.P. at Couteau-du-Lac near Montreal (Marois 1987). Thus, even on the St. Lawrence, Laurentian Tradition dating and subdivision is not clear.

Funk's recent (1988) summary of Laurentian makes the following points. 1) The Laurentian, as defined, is a term inclusive of the Brewerton, Vosberg and Vergennes Phases in New York, adjacent Vermont, southern Ontario, and southwestern Quebec. 2) These three phases may overlap in time and space. 3) A fourth phase, named Duck Bay, characterized by Brewerton corner-notched and side-notched points without small-stemmed points, is present in Connecticut. 4) These four phases date between 5200 and 4000 B.P. 5) Where small-stemmed point material is also present, pure Laurentian components (usually Brewerton) predate the small-stemmed point. 6) The cluster of Laurentian "core" traits breaks up in time and space away from the core time/area. 7) In addition, Funk (1988) defines a "Proto-Laurentian" dating back to just before 6000 B.P. that contains some of the Laurentian traits later found in the Vergennes and other Laurentian Phases.

Funk's (1988) definition of Laurentian is restrictive, and limited to the three clearly defined Brewerton, Vosburg and Vergennes Phases. He excludes the Proto-Laurentian from his definition of the Laurentian Tradition because, among other reasons, evidence of gouges, plummets and other polished stone (slate) tools are lacking at sites of appropriate age in New York (Funk

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1988:29). It is clear, however, that these specific traits, accompanied by large side-notched points, extend back to before 6000 B.P. at sites in central Maine (e.g. Sharrow, Petersen 1991). Thus, the Proto-Laurentian in Maine seems much more closely related to the later Vergennes Phase than Funk has been able to demonstrate so far in New York. Moreover, Ritchie's inclusive definition of the Laurentian Tradition (1965:79 quoted above) clearly is at odds with Funk's more restrictive definition. Thus, for the purposes of this context, we are including Proto-Laurentian within the Laurentian Tradition.

Core material culture traits cited by Ritchie (1969:84-86) and Funk (1988:33) as characterizing the Vergennes Phase include Otter Creek (lanceolate, side-notched, ground in the notches) points and Vosburg points, ulus, gouges, adzes, chippers, plummets, endscrapers, drills, stone rods, celts, winged bannerstones (atlatl weight), ground stone points, copper fish gorge and barbed bone points. Funk (1988) states that Vosburg assemblages (no Otter Creek points presumably) lack ground slate points. Brewerton Phase assemblages lack ground slate points and ulus. All three phases have gouges, plummets, single hammerstones, broad notched points, and various forms of crude bifacially-chipped choppers.

Archaeological components clearly related to the Vergennes Phase and to its ancestral Proto-Laurentian form have been located in Maine. To date, there are no components that contain Brewerton materials without Small Stemmed Point material also being present. Therefore, we define the Laurentian Tradition in Maine, as covered by this Context, as the Vergennes Phase and any Proto-Laurentian assemblages postdating 6000 B.P. We end the Context at an undetermined time after 5000 B.P. but before 4300 B.P., by which time Small Stemmed Point and Moorehead Phase assemblages were commonplace and the Vergennes Phase seems to have disappeared. (Vergennes Phase material may date as late as 4700 B.P. at the Sharrow site [Petersen 1991].) Substantial portions of this treatment will have to be rewritten if pure Brewerton-related components are ever located in Maine. We will treat assemblages containing mixtures of Brewerton and small-stemmed points in the Small-stemmed Point Context.

Within the last few years, Maine archaeologists have learned much about the Laurentian Tradition in Maine in terms of material culture inventory and subsistence practices. Site 95.20 in Washington County (Cox 1991) has provided a detailed stone tool inventory, a series of radiocarbon dates around 5000 B.P., calcined mammal, bird and fish bone, and a swordfish sword barbed point. The Sharrow site in Milo (Petersen 1991) yielded a smaller assemblage of stone tools, but from an excellent stratified context with clear continuity back into the Middle Archaic before 6000 B.P. A squash rind dated about 6000 years B.P. from the Sharrow site provides the earliest

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evidence of horticulture in the eastern United States, and raises the question of basic subsistence strategy for the Middle Archaic and Laurentian Archaic. The Cates Farm (Spiess and Trautman 1992) has provided a Vergennes Phase assemblage, calcined bone and pit features, and a radiocarbon date of about 5000 B.P. near the [REDACTED]. An assemblage of stone tools from a drowned estuarine shoreline off Deer Isle (Cox 1991) may indicate Middle Archaic or Laurentian coastal occupation which may have, in part, been dependent upon harvesting oysters. A circa 5000 B.P. burial feature has been identified at site 155.4 at the headwaters of the [REDACTED] (Buchanan et al. 1991), providing information on the Laurentian use of far northern interior Maine beyond the few surface-collected artifacts from the region heretofore. Laurentian occupation of Maine is now a demonstrated reality, with some potentially interesting topics for future research.

Identification

There have not been any systematic surveys in Maine to locate sites with Laurentian components, and only one (Cox 1991, site 95.20) excavation particularly designed to recover data on the Laurentian Tradition.

Snow (1975) was the first to isolate what we now suspect is a Laurentian Tradition component: in the Group I burials at the Hathaway site, Passadumkeag, radiocarbon dated 5165±185 B.P. (SI-878). The assemblage is characterized by holed tabular whetstones, lanceolate chipped projectile points, and greenstone tuff gouges. Later (Group II) burials did not include greenstone tuff woodworking tools, but did include Ramah chert projectile points. Snow assigned both Hathaway burial groups to the "Moorehead complex" dating 5100 to 3700 B.P., although he recognized the clear relationship to the Laurentian Tradition. Among other things, the associated Passadumkeag habitation site contained an Otter Creek like point and broken ground slate that might be from a Laurentian Tradition component.

The first explicitly recognized Vergennes Phase component was assemblage 2 at the Hirundo site (National Register 9/11/75) (Sanger and MacKay 1973, Sanger 1975, Sanger et al 1977), although the site was multi-component, unstratified, and yielded radiocarbon dates circa 4200 B.P. from features near Otter Creek points but not directly associated with them. Sanger (1975) reports on collections survey which located Vergennes Phase components on the Aroostook River in Maine, the Spednik Lakes on the St. Croix River in Maine, and the St. John River in New Brunswick.

Concurrently, scallop draggers recovered occasional large stone artifacts from an underwater location in the Lazygut Islands off Deer Isle, beginning with a slate ulu (Rice 1979). The collection now includes a biface preform, two celts, a plummet, and two large bifaces made from red silicious

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mudstone (slate). Divers recovered a flake core, rhyolite flakes and a biface (Cox 1991). The site lies on the tip of a drowned point of land, with its upper surface at 8 meters below mean sea level. The point slopes down to a 12 meter deep channel to the east and a 9-10 meter deep flat to the west. (Compare the 6000 B.P. relative sea level of -12 meters and 5000 B.P. sea level of -7 meters.) Oyster shells dredged from the vicinity, probably in one of the channels and not demonstrably associated with artifacts, radiocarbon dated 6100±65 B.P. (SI-4650).

Archaeological testing beginning in 1984 at the Brigham site and 1985 at the Sharrow site (National Register 12/24/86), on the Piscataquis River in Milo, located deeply stratified alluvial deposits that contain multiple features and occupations of the Laurentian Tradition (Petersen 1991). Two large, side-notched points that differ only in detail from classic Otter Creek notching and stem treatment were recovered from the Brigham site in a stratum radiocarbon dated 5760±100 B.P. At the Sharrow site, multiple features in lower stratum III and upper stratum IV, with radiocarbon dates of 4700±90 B.P. on Feature 31, 5820±110 B.P. on Feature 16, and 5900±100 and 6000±130 B.P. on Feature 17 bracket the Laurentian Tradition occupations. The oldest of many broad side-notched points and fragments, similar to the Otter Creek type, is associated with Feature 16. Ground slate point fragments, plummets, high-backed quartz endscrapers, gouges and other tool types were recovered from stratified contexts dating to the Laurentian Tradition, Middle Archaic and (for some types) Early Archaic. We will return to other aspects of the Sharrow site later.

Work on site 95.20, on a narrows between Long and Lewey Lake, St. Croix drainage, Washington Country, began in 1986 (Cox 1991). This intensive archaeological test project was the only one in Maine to date to focus on the Laurentian Tradition. The excavators were rewarded with a large sample of stone tools, features, and calcined bone fragments. The large sample of stone tools allows a detailed definition of the Vergennes Phase in Maine (Cox 1991) and comparison with other assemblages in the Northeast. Cox concludes that the similarities to classic Vergennes Phase sites such as Otter Creek No. 2 and the KI site in Vermont are so close that we are justified in stating that the Vergennes Phase was present in Maine. Radiocarbon dates on features include 5070±275 B.P. (GX 16704) for Feature 15, 5150±160 (GX-16441) for Feature 17, and 4965±190 B.P. (GX-16440) for Feature 18 charcoal from square N12E0 (Cox 1991). We will return to this site also for many aspects of further discussion in this Context.

The stone tool collection from the Cates Farm (site 38.10) at the outlet of [redacted] in the [redacted] has been known for many years to contain multiple Otter Creek points (along with other Archaic point styles), plummets, adzes, celts and gouges, ground slate points and stone rods.

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Testing at the site in 1990 (Spiess and Trautman 1991) encountered pit features with debitage, charcoal and calcined bone, but no diagnostic artifacts. A radiocarbon date of 5000±70 B.P. (Beta-44175) was obtained from Feature 2.

Hydroelectric relicensing archaeological survey of Millinocket Lake, in northern Maine at the headwaters of the Aroostook drainage, located a probable burial feature at site 155.4. The feature contained red ocher, charcoal, a large distal biface fragment (non-diagnostic), but no bone. The feature was radiocarbon dated 4630±70 (Beta 43137) (Buchanan and Petersen 1991).

The precise stratigraphic control at the Sharrow site may allow us to add additional types of artifacts to the trait list of the Laurentian tradition in Maine. In particular, one Otter Creek-like point (near Feature 15 circa 5300 B.P.) exhibits a strange suite of attributes (Petersen 1991: Figure 41 upper right). This point is broadly side-notched with a basal width comparable to most Otter Creek points from the site. However, the point is regularly serrated distal to the notches, and it was not made as a product of true biface reduction. It is, in fact, made on a flake with simple marginal retouch on one face along the edges, and retains the overall curvature of the original flake. This complex of attributes (serration, and simple marginal retouch of a flake preform) has been noted on multiple points from the Hunter Farm site (15.110) in Topsham, with radiocarbon dates of 4200 and 4700 B.P. and a heavy small-stemmed point component (Spiess, unpublished). The Hunter Farm flake points, and some other examples from site 27.59 in Warren, exhibit a variety of basal treatment, including corner notching reminiscent of Brewerton points, but broad side-notches are not common. It is possible that serrated flake-point manufacture is somehow related to the Laurentian Tradition in Maine, heretofore unrecognized. If it is a local replacement for the Brewerton side and corner-notched series, then the question of multiple Laurentian Tradition phases in Maine is reopened.

Geographic Distribution

Sites with diagnostic Vergennes Phase artifacts, particularly [redacted] across much of Maine except southwestern Maine. In the [redacted], Vergennes components are known from sites on the Spednik Lakes (Sanger 1975:66), at least four sites (Cox 1991) and possibly as many as 10 in the [redacted] drainage known from the [redacted] collection (Konec 1985:16, 22), and site 95.20. The [redacted] headwaters [redacted] the location of site 155.4 with a possible burial component (Buchanan and Petersen 1991). The [redacted] yielded a few Otter Creek points and many ulus from small lakes north (downstream) from [redacted] (Butler and Hadlock 1962). The headwaters lakes of the West

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[redacted] located close together, and both systems contain Vergennes components. On the [redacted] they are present on [redacted] (site 143.82, Quinn and Petersen [1991], see Hamilton et al 1984:13), and at sites 121.23, 122.22, and 135.5 in the lakes around [redacted] (Nelson et al 1991). Vergennes components seem to be present on [redacted] on the [redacted] (Hamilton et al 1984) as indicated by ground slate, holed whetstones, plummets, and a few [redacted] points.

Further downstream on the [redacted] and its tributaries, a [redacted] component is known from site 123.6 at the mouth of the [redacted] indicated by at least four [redacted] points in the Schofield collection (Cox 1991). The Hathaway site at Passadumkeag (site 91.1) is a short distance from the [redacted] on a tributary river. The Sharrow and Brigham sites (National Register 12/24/86) are located on the Piscataquis, another [redacted] tributary. The Hirundo site is located on Pushaw stream, which joins the Penobscot near Old Town. The [redacted] site (30.42) [redacted] near [redacted] is the only site in the mid-Coast to yield [redacted] Phase artifact.

On the [redacted] the Dennison site (69.22, Petersen 1991b) contains features of appropriate age, but no diagnostic [redacted] artifacts. The [redacted] (site 38.10 Trautman and Spiess 1991), at [redacted] the [redacted] tributary of the [redacted] has a demonstrated [redacted] does site 53.15 on the [redacted] (Doyle 1984, Bartone et al 1990). Site 25.1 on [redacted] in Gardiner has yielded three [redacted] and one Vosburg points and associated ground stone (Cox 1991).

Diagnostic Otter Creek points are rare, and no [redacted] components have been demonstrated west of the [redacted] drainage. One Otter Creek point has been collected from [redacted] (65.10, Archer Poor collection, Gramly 1981:14), in the [redacted] headwaters of the Androscoggin.

Two [redacted] like points are known from site 22.8, on Bear Pond at the headwaters of the Presumpscot drainage (Spiess 1986). And one [redacted] point has been recovered from an eroding site at the mouth of the [redacted] (site 9. [redacted], R. Doyle, personal communication 1991), this point being only the second [redacted] point from a coastal context in Maine.

Despite the few [redacted] points recovered from west of the [redacted], no Vergennes Phase components have been encountered in extensive surveys of the [redacted] on the [redacted]

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[REDACTED] or the Bonny Eagle impoundment on the [REDACTED] (Howie and Petersen 1988, 1989). Several deeply stratified sites which contain strata of appropriate age were encountered in each of these surveys. We consider it likely that Vergennes Phase occupation did not extend west of the [REDACTED] drainage, or if it did it may have been confined to the headwaters lakes of the [REDACTED]

From the [REDACTED] drainage eastward, [REDACTED] components are located in the same kinds of places as preceding Early and Middle Archaic sites: primarily lake inlets and outlets or inter-lake thoroughfares (flowages), and on tributary rivers and larger streams with appropriate-aged alluvial deposits. There is a seeming contrast with Susquehanna Tradition and Ceramic period settlement patterns, which sites seem more dispersed around lakes and on smaller streams coupled with less intense use of the locations favored previously. The lack of demonstrated Otter Creek occupation along the main valley of the middle and lower Penobscot and Kennebec Rivers may be a function only of not yet locating enough stratified alluvial deposits or terrace surfaces of appropriate age to test, although work by Sanger (various) in several deeply stratified sites in the [REDACTED]

Research Significance Themes

The significance of many prehistoric archaeological sites is established under criterion D of the National Register: whether or not a site can contribute substantial data to the study of history or prehistory. The Research Significance Themes that follow are broad topics to which archaeological data are particularly applicable. They form a consistent set of "focal points" for assessing current knowledge, and the contribution of any single site, to the study of prehistory.

Theme 1, Culture History

This theme engenders two types of related research. Most basic is the elucidation of the details of succession of tool types and other artifacts in the archaeological record, and the development of "culture history". The second line of research is the tracing of the ancestry of specific groups of Native Americans back into the prehistoric past.

We have, above, briefly discussed archaeologists' taxonomic problems in subdividing early Late Archaic (before the Susquehanna Tradition) cultural expressions in the Northeast, from Labrador to Pennsylvania and west to the Great Lakes, and the use of the term "Laurentian". Only the Vergennes Phase of Laurentian and a Proto-Laurentian predecessor are recognizable at present

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in Maine, and that only in western, northern and eastern Maine. Vergennes Phase artifacts are rare in western Maine.

Funk's (1988) suggestion of a "Proto-Laurentian" dating to circa 6000 B.P., and demonstrated continuity with preceding Middle Archaic culture has been amply demonstrated by components dated circa 5700 B.P. at the Brigham site and back to 6000 B.P. at the Sharrow site. In fact, in terms of flake tool, ground slate, pecked and ground stone, and subsistence and settlement patterns the "Proto-Laurentian" and Vergennes Phase seem to be continuations of earlier Middle Archaic culture with the addition of large, side-notched points (again, with the exception of southwestern Maine). By 5200 B.P. sites that can be clearly and closely related with the Vergennes Phase of the [redacted] Vermont, are distributed from the [redacted] eastward to at least the [redacted] westward across northern New Hampshire and Vermont to the [redacted] and northward to the north shore of the upper [redacted]. The recognition of the geographic boundaries of this "culture", and its direct antecedents in local Middle Archaic culture, is a major recent advance in understanding Maine prehistory.

The Vergennes Phase was replaced across Maine by the Moorehead Phase or a preceding Small-stemmed Point culture (summarized in another context) beginning perhaps before 4500 B.P., and completed before 4200 B.P. The Moorehead Phase appears to be primarily a descendant culture of the Small Stemmed Point tradition of southwestern Maine and southern New England, although debatable amounts of cultural borrowing and cultural hybridization with the Vergennes Phase may have occurred. Thus, we currently see cultural continuity across most of Maine from at least the Middle Archaic and perhaps the Early Archaic (at least 8000 B.P. or before) until roughly 4500 B.P.

The several millennia of cultural continuity which terminates in the Vergennes Phase, and the subsequent cultural replacement or hybridization process that replaced the Vergennes Phase, occurred too early in prehistory to attempt equation with even major modern cultural-linguistic groups in the Northeast (Funk 1988:37-38). Speculation about differentiation between Iroquoian and Algonkian speakers during the early Late Archaic is now discredited by data on rates of linguistic change, as well as our inability to trace cultural continuity to the present in the archaeological record. Therefore, the question of relationship (absence or amount) between Vergennes Phase occupants of Maine and modern Maine Native Americans is one that cannot now be answered by the available archaeological data.

Theme 2: Settlement Pattern

Settlement pattern includes the study of geographic patterning of archaeological data on a continuum of scale. On the largest scale, we look

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for use of broad regions of the state and of the Northeast. At an intermediate scale, we look for association between sites of a particular archaeological culture and various attributes of landscape and environment. At the smallest scale, we look for intrasite patterning, including activity patterns, house floors, etc.

At the largest (regional) scale, Cox (1991) has commented that there seem to be two major concentrations of Vergennes Phase sites in the northeast: one in the [REDACTED]

[REDACTED] (and western New Brunswick). It is possible that these two concentrations of sites represent population centers for the Vergennes Phase about 5000 B.P. Within the state of Maine, we have already commented on the relative lack of evidence for Vergennes phase material in the Androscoggin and [REDACTED] (with the exception of headwaters lakes). The evidence, at present, indicates that Vergennes Phase people did not occupy Maine west of the [REDACTED] possibly with the exception of the use of interior lake basins.

In central, eastern and northern Maine, Vergennes Phase sites are located (as are the vast majority of sites in Maine) along [REDACTED]. But they are found most commonly at [REDACTED].

[REDACTED]. Coastal or estuarine occupation is demonstrated by a site (30.85) underwater in the [REDACTED]. Between 5 and 12 meters of relative sea level rise (land subsidence) has occurred since coastal Vergennes Phase sites were occupied, presumably right long the tidewater coast of the time. Coastal erosion has devastated that archaeological evidence.

Vergennes Phase sites, especially those near lake inlets, outlets and interlake thoroughfares, are often located on ground that is now relatively marshy or wet (even if it is not affected by raised water levels due to hydroelectric impoundments). Based upon small amounts of paleo-environmental information, we reconstruct the climate circa 5000 B.P. as slightly drier and slightly warmer than at present, which may have locally lowered water tables.

Site 95.20 is the only Vergennes Phase occupation in Maine where enough area has been excavated to detect internal site patterning if present. Approximately 1% of the site's 3000 m² have been excavated, but Cox (1991) detected significant spatial clustering of artifact types (plummets and Otter Creek points in one area), ulus and drills in another area, and stone rods in a third area. The existence of such spatial patterning within a 10x30 m area is support for a limited length of occupation (a few years) by a large number of people (Cox 1991). Unfortunately, no definitive evidence of houses was encountered. Thus, it is possible that sites such as 95.20 were relatively large villages containing perhaps hundreds of people, rather than a few dozen

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which is the group size that archaeologists traditionally envision for hunter-gatherers living in a north-temperate forest.

Theme 3: Subsistence Patterns

Vergennes Phase faunal samples have been recovered from four sites in Maine: 95.20 (Cox 1991, Lewis 1991), the Sharrow and Brigham sites (Petersen 1991, Spiess 1992), and the Cates Farm (Spiess and Trautman 1992). All fauna are preserved as calcined bone fragments. The 95.20 assemblage (which is Vergennes Phase in age) is dominated by mammal bone (98%), primarily beaver and muskrat. Bear, deer, moose, mink and otter are present. The remaining 2% of the assemblage is mostly turtle and bird bone, with a few fish (0.2%). Painted and snapping turtle are present, although several lines of evidence indicate the painted turtle was mostly used for shell rattles. Duck, white perch and unidentified small fish complete the sample. Data on muskrat epiphyseal fusion indicates a fall and early winter occupation (Cox 1991 says "fall").

The Brigham site faunal sample is small: beaver, black bear, and unidentified turtle. The sample from the Sharrow site is dominated by beaver and muskrat (number of identified specimens about 190), with fish a close second (n= 92), and a few unidentified bird and turtle bones. The fish species identified include American eel, shad and a small salmonid (?trout). Feature 2 at the Cates Farm yielded a small sample of calcined bone, from which muskrat, shad or alewife and bird were identified. Therefore, these interior riverine and lacustrine Vergennes Phase and Proto-Laurentian occupations employed a mixed hunting and fishing strategy which focussed on local aquatic mammals, birds, turtles, and where they were seasonally available, catadromous and anadromous fish. For various reasons of preservation and identifiability in calcined samples (Spiess 1992) large mammal identifications are probably under-represented in these counts. Deer, moose and bear hunting is documented.

There are two other aspects of Vergennes Phase subsistence that may be more surprising: the first is the extent of estuarine and maritime use. We have already commented upon the presence circa 6000 B.P. of oysters in the tidal channel adjacent to the Lazygut Island underwater site. (Oysters can survive only in estuarine water of limited salinity and temperature range, and were rare and localized during later Maine prehistory [Sanger and Sanger 1986]). The primary shellfish resource available to Vergennes Phase coastal inhabitants were therefore probably localized populations of oysters.

Another aspect of marine subsistence might be indicated by the recovery of a unilaterally barbed bone harpoon (in fragments, calcined) from (interior, lacustrine) site 95.20. The harpoon is manufactured from

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swordfish sword, a material commonly utilized for point and dagger manufacture by contemporaneous Small Stemmed Point culture further south along the coast, and by the successor Moorehead Phase. However, unilateral barbed bone points (made from antler or bone) are one of the basic culture traits of the Laurentian Tradition as defined originally by Ritchie and reviewed by Funk (1988). Although Cox (1991) is reluctant to do more than raise an hypothesis, the evidence of the estuarine site in the Lazygut Islands and the probable use of swordfish sword (unless it was an imported trade item) must indicate some level of maritime hunting and fishing capability for the Vergennes Phase.

Even more puzzling is the first evidence of Archaic Period horticulture from Maine. Petersen (1991:140-143) reports the identification of squash rind by Nancy Asch Sidell, who has extensive experience identifying similar materials from the [REDACTED], from Feature 20 at the Sharrow site. Feature 20 was radiocarbon dated on wood charcoal 6320±110 B.P. (Beta 18234). The squash rind itself has recently been radiocarbon dated to about 5700 B.P. by accelerator mass spectrometry (Petersen, personal communication), which confirms a date of about 6000 B.P. This piece of squash, which has to be a domestic plant for various reasons (Petersen and Asch Sidell, personal communications), predates the next oldest evidence of horticulture in Maine by about 5000 years. Moreover, it is only about 1000 to 1500 years younger than the oldest squash dates from North America (in the Mississippi Valley). The date of Feature 20 falls during the terminal Middle Archaic, before the arbitrary 6000 B.P. beginning of the Late Archaic; but the date on the squash rind means that the actual average date on the feature must be right near 6000 B.P. We have already commented on the continuity from Middle Archaic to the "Proto-Laurentian" about 6000 B.P., so a few centuries shift of the age of the squash does not affect the argument that Laurentian Tradition occupants of Maine might have been familiar with horticulture of a limited number of species of plants. Horticulture means at least planting seeds and harvesting plants at the same location sometime later, so it would have had effects upon seasonal scheduling and settlement patterns.

Theme 4: Mortuary Practices

Three sites in Maine have yielded Laurentian Tradition mortuary features based upon radiocarbon dates, although none have included diagnostic Vergennes Phase artifacts such as Otter Creek points. Eighteen features, constituting Group I burials at the Hathaway cemetery in Passadumkeag (Snow 1975) might be Laurentian Tradition in age. Charcoal from one dated 5165±185 B.P. (SI-878). The features were marked by elliptical or circular patches of red ocher less than one meter in diameter and less than 50 cm deep. A few stone tools, including gouges and abrasives, were found in each feature. No bone was found. It is likely that the dead were interred mostly as bundle

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burials (disarticulated, after some period of exposure) since the features are so small.

A similarly sized red ocher feature was found partially exposed on the surface at site 106.23 in Brownville Junction (Spiess et al 1984). It yielded one elongate whetstone and enough charcoal for an accelerator radiocarbon date of 5950±230 B.P. (Beta 8926). No bone was preserved.

As stated elsewhere above, testing at site 155.4 on Millinocket Lake encountered a small elliptical feature containing red ocher, a distal biface fragment, no bone, and a charcoal sample that yielded a date of 4630±70 B.P. (Beta 43137).

It seems that Laurentian Tradition folk buried their dead in both isolated graves and cemeteries. Usually the graves were small, shallow pits which would hold disarticulated remains of one person and a few grave goods, some red ocher and a few stone tools of which survive. The presence of charcoal may or may not indicate that fire was associated with processing the body for interment, but bodies do not seem to have been cremated because calcined bone has yet to be found.

Robinson (1992) is in the process of developing a framework for understanding the burial tradition (religious tradition) around the Gulf of Maine which originated during the Early or Middle Archaic, included the Laurentian Tradition (sensu lato) and culminated in the Moorehead Phase.

Theme 5: Transportation, Travel, Trade and Commerce

Elsewhere, we have presented the case that the birch bark canoe was invented or introduced to Maine after the Laurentian Tradition (Ceramic Period context, Susquehanna Context, Early and Middle Archaic context). Laurentian Tradition inhabitants of Maine were evidently dependent upon heavier boats, perhaps dugout canoes or plank canoes, for water travel in the interior and along the coast. This idea is in part based upon the much higher incidence of heavy woodworking tools (gouges, adzes, axes) in the Early and Middle Archaic and Laurentian Tradition than later in the Susquehanna Tradition and Ceramic Period, and a perceived shift in settlement pattern between the former and the latter. Birch bark canoes seemingly made it possible for Susquehanna Tradition and Ceramic Period Native Americans to use the small drainages and portages of the Maine interior more extensively than before. We surmise that dugout or plank canoe travel, at least in the interior, would have meant travel upstream in relatively placid flowing water and on lakes, cross-country travel on foot, and dependence on a cached canoe or manufacture of a new one when moving into a new drainage.

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Trade and commerce is usually detected in the archaeological record by identifying distant sources of exotic raw materials (especially stone and copper in Maine) imported into an area of study. It is our impression that locally-available rock dominates the flaked stone assemblage at Vergennes Phase sites (with the occasional exception of chert Otter Creek points). However, a systematic study has not been accomplished, nor has much attention been paid to the sources of slate and pecked-stone tool material.

Theme 6: Social and Political Organization

Few data exist currently that are applicable to this theme. However, the maintenance of permanent cemetery locations, such as the Hathaway site, is interpreted by some archaeologists as evidence of lineage-based social systems with geographic foci.

Theme 7: Laboratory and Field Techniques.

Occasionally, a particular site may be significant because the application of a particular field or laboratory technique makes a special contribution to understanding the relevant culture or time period. Identification of a cultigen, such as squash from the Sharrow site, represents application of a series of laboratory techniques beginning with flotation of charcoal-containing feature samples followed by microscopic sorting and comparative identification of charred plant remains. This identification, and the subsequent search for other similar identifications in other Laurentian Tradition sites, and in earlier or later sites (for purposes of comparison of botanical remains and human adaptation) means that application of flotation techniques and charred plant remains identification should be routinely applied henceforth. Eventually, some sort of quantitative assessment of the importance of horticulture to Laurentian Archaic and other cultures in Maine will be possible, with a substantially expanded database.

Even if the Sharrow site had not contained a dramatic, 10,000 year long stratified cultural sequence, the identification of the oldest cultigen by far in the Northeast from a secure context at the site would have been enough to guarantee its significance.

Theme 8: Anthropological Archaeology.

The identification of a cultigen at the Sharrow site extends backward in time dramatically the first appearance of horticulture in the Northeast. Comparative study of rates of culture change, or even relative lack of culture change, associated with horticulture adoption now can include much of the Maine prehistoric sequence. Or perhaps horticulture was an experiment

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that was tried only briefly (less than a millennium) in Maine about 6000 B.P., and then dropped, not to be adopted again until about 5000 years later. If that was the case, then we might gain greater understanding of the process by which horticultural practices spread and reach their limit in hunter-gatherer cultures.

Toward the beginning of this context we also speculated about the geographically and temporally overlapping nature of material culture trait distribution within the broader Laurentian Tradition and across the northeast at the time. Seemingly this pattern contrasts with other times when clear geographic and temporal cultural boundaries are recognizable in the archaeological record. The mechanisms of cultural interaction and contact must have differed between times of relatively definite and relatively indefinite cultural boundaries or contrast. The Laurentian Tradition could thus become a study case of one particular end of a continuum of ways that human beings have of dealing with their neighbors in erecting and maintaining cultural barriers.

Theme 9: Human Biology.

No Laurentian Tradition human remains are extant from Maine. The most likely possibility would be recovery of small fragments of calcined bone from mortuary context.

Theme 10: Environmental Studies.

Archaeological and environmental studies contribute substantially to our understanding of causal relationships between climatic and environmental change and culture change. The sedimentological record for the Piscataquis River drainage, as preserved in the Sharrow and Brigham sites in Milo, including dated site stratigraphy, incipient soil formation, and carbonized plant remains, provides an unusual opportunity to study hydrological and climatic conditions for a small river drainage for most of the Holocene. These site specific data are necessary for integration with more broadly-based studies of plant pollen and other environmental "signatures" from the past. Laurentian Tradition occupations occurred during the middle of the Holocene, at which time recent studies have indicated little environmental change in the forest with the exception of a possible disease episode that attacked hemlock trees. Some idea of the effect, if any, of such environmental perturbations on human occupation of Maine might be approached through detailed study of stratigraphic sequences at such sites as the Sharrow and Brigham sites.

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Theme 11: Non-Mortuary Religious practices.

No evidence of non-mortuary religious practices have yet appeared from the period.

Theme 12: Cultural Boundaries.

The Vergennes Phase is the focus of two related questions about cultural boundaries. First, if the [REDACTED] is marked by a western (and southern) boundary along the [REDACTED] what cultural group is present west of that boundary but contemporary with the Vergennes Phase? Second, what happens at the end of the Vergennes Phase east of the [REDACTED]. The answer to both questions is, in part, related to the Small Stemmed Point culture, although we dimly understand the complexities of the situation at present. We have mentioned above that Small Stemmed Point in southern New England shares a large number of culture-traits with Vergennes, including plummets and possibly ground slate ulus. Moreover, at least during the latter half of the fifth millennium, small stemmed points are often found with Brewerton triangle and Brewerton eared points. The exact nature of "Brewerton" in southern New England and southern Maine is thus involved in the answer.

Beginning before roughly 4500 B.P. the Vergennes Phase was replaced in most of all of its range in Maine by the Small-stemmed Point tradition and/or by the Moorehead Phase. Moorehead Phase flaked stone points are clearly related technologically to small stemmed points. Some other aspects of Moorehead Phase culture, however, appear to be borrowed from both Vergennes Phase and Small Stemmed Point antecedents. In fact, it is not clear whether any recognizable Small-stemmed Point or Moorehead Phase components are contemporary with any Vergennes Phase components.

Further investigation of these problems will be predicated upon finding sites with occupation surfaces of limited temporal duration during the fifth millennium across much of Maine.

Evaluation

The research significance themes discussed above demonstrate that research pertinent to the Laurentian Tradition still focuses on questions of cultural definition and geographic and temporal boundaries. We are just beginning to ask for more detailed information on settlement pattern, subsistence and the topics of themes 4 through 12. Because much research is still at the basic culture-historical level based upon diagnostic stone tools, judgement of site significance for National Register eligibility may be at corresponding levels of data complexity.

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National Register eligibility criteria based upon Laurentian Tradition components are as follows:

One site with a demonstrable Laurentian Tradition component in a given management unit is significant if it will likely yield a large sample of Laurentian Tradition artifacts. Other sites in a given management unit must exhibit the following criteria for significance based upon a Laurentian Tradition component: the component must be separable from other prehistoric artifactual material on the basis of horizontal and/or vertical stratigraphic separation or clustering, and diagnostic lithic tools must be associated with one or more of the following types of data: 1) features, 2) calcined or non-calcined vertebrate faunal remains and/or invertebrate faunal remains, 3) charred plant remains, and/or 4) human biological remains. The association of Laurentian Tradition material with features may be assumed if the site yields a reasonable density of Laurentian Tradition lithic material separable from other prehistoric material, if the context of preservation is not disturbed extensively, and if features are present and spatially congruent with the Laurentian Tradition component and/or are radiocarbon dated between 6000 B.P. and 4500 B.P.

Moreover, any site with a Laurentian Tradition component that can make an extraordinary contribution to any of the Research Significance Themes presented above is significant.

At the time of writing there are 22 sites in the state inventory listed with a Laurentian Tradition cultural presence. Both Vergennes Phase components and components that contain Brewerton-type artifacts are represented, so that we cannot specify how many have pure Vergennes components without further documentary or collections research. Only a few of these sites, such as the Sharrow site, are currently listed on the National Register of Historic Places.

Protection

The vast majority of sites with Laurentian Tradition components occur along the shores of lakes, inter-lake thoroughfares, or along rivers. Some of these sites are deeply buried in stratified context, but many are shallowly buried in unstratified contexts. The primary threat to these sites appears to be erosion of river and lake shores caused by raised water levels behind hydroelectric dams. Archaeological survey of these impoundments is proceeding, with adequate mitigation through site protection, monitoring and/or data recovery.

In special cases, such as site 95.20, the ongoing erosion at the site is not subject to hydroelectric licensing mitigation. Testing of the site was

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accomplished with alternative funding sources. It may be difficult to fund adequate data recovery or erosion control measures at this site, however.

No Laurentian components are known from shell middens or other intact contexts along the Maine coast, probably because most have already eroded. Problems of coastal erosion and data recovery therefore do not apply. One probable Laurentian Tradition component has been identified as an underwater site, near Deer Isle. The site is subject to continued "sampling" by scallop draggers. Protection of the site is impractical. Data recovery through underwater archaeological techniques has been demonstrated to be possible on this site.

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SUSQUEHANNA TRADITION CONTEXT -- Evaluation Section

The research significance themes discussed above demonstrate that research questions pertinent to the Susquehanna Tradition still focus on questions of origin and internal spatial/temporal relationships. We are just beginning to ask for more detailed information on settlement pattern, subsistence and the topics of themes 4 through 11. Because much research is still at the basic culture-historical level based upon diagnostic stone tools, judgement of site significance for National Register eligibility may be at corresponding levels of data complexity. Site significance criteria based upon Susquehanna Tradition components are as follows.

One site with a demonstrable Susquehanna Tradition component in a given management unit is significant if it will likely yield a large sample of diagnostic Susquehanna Tradition artifacts.

Other sites in a given management unit must exhibit the following criteria for significance based upon a Susquehanna Tradition component. The component must be separable from other prehistoric artifactual material on the basis of horizontal and/or vertical stratigraphic separation or clustering, and it must be clearly associated with one or more of the following types of data: 1) features, 2) calcined or non-calcined vertebrate

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faunal remains and/or invertebrate faunal remains, 3) charred plant remains, and/or 4) human biological remains. The association of Susquehanna Tradition material with features may be assumed if the site yields a reasonable density of Susquehanna Tradition lithic material separable from other prehistoric material, if the context of preservation is not disturbed extensively, and if some evidence of feature preservation is present. Moreover, any site with a Susquehanna Tradition component that can make an extraordinary contribution to any of the Research Significance Themes presented above is significant.

At the time of writing there are 84 sites in the state inventory with a Susquehanna Tradition cultural presence. Seventeen (17) are currently listed on the National Register of Historic places, with concentrations of listing in the North Haven-Vinalhaven area, Solon area, and Milo area. None of the sites is listed solely because of its Susquehanna Tradition component.

CERAMIC PERIOD CONTEXT -- Evaluation Section

Evaluation

A full range of research topics applicable to band-organized hunter-gatherer-fishermen, small-scale horticultural societies, the interaction between the two, and the part played by maritime resources in a Mesolithic-grade economic system are available for study in Maine. In addition, because of historic factors in the concentration of research on the Archaic Period in Maine until recently, because of a recently introduced focus on ceramic attribute and vessel lot analysis which allows development of a fine-scale chronology, and because of recent advances in understanding the finer stratigraphic details of shell middens and alluvial sites in Maine, there is a basic need for simple chronology building. Accompanying the more detailed chronology will be greater opportunity for studies of synchronic geographic patterning in material culture. At the time of writing there are nearly 700 known sites with demonstrably Ceramic period components in Maine. In addition, a high percentage of the remaining nearly 4,000 known Maine sites must also have ceramic period components. This large number of sites means that relatively detailed criteria can be used for National Register eligibility determination.

National Register Eligibility Criteria.

For a Maine site to be eligible for listing in the National Register of Historic Places because of one (or more) Ceramic Period component(s), that (those) component(s) must: (a) be clearly separable from other components on the basis of horizontal distribution or vertical stratigraphy, or some combination of the above and typological or raw material analysis; and (b) contain ceramics, lithic and/or bone tools which are diagnostic and can be

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assigned to some subdivision of the Ceramic Period, either one or several of CP1-7 (of Petersen and Sanger 1989) or an Early/Middle/Late division of the Ceramic Period as commonly understood; and (c) at least in part remain in intact context or site matrix, mostly undisturbed by manmade or natural forces such that there is a close association between diagnostic elements of material culture and one of the following: one or more features such as a fire hearth, a living floor or major portion thereof, a fossil soil surface, and/or a refuse deposit. The feature, living floor, soil surface or refuse deposit must contain one or more of the following in addition to stone tools: charcoal suitable for radiocarbon dating the occupation, charred plant food remains, faunal remains, human remains, and/or mortuary goods or personal adornment. Moreover, any site with a Ceramic Period component that can make an extraordinary contribution to any of the Research Significance Themes presented above is significant.

Using these criteria, an eroded lakeshore scatter of lithic remains would not be eligible. A partially eroded site where there was demonstrable association of features containing charcoal, faunal remains, etc. and undisturbed material culture of one Ceramic Period temporal subunit in intact soils might be eligible. A shell midden that has been partially disturbed by looting, but which contains enough undisturbed matrix to demonstrate that material culture from limited subdivisions of the Ceramic period can be associated with faunal remains in intact strata is eligible. A riverine site within stratified alluvium is eligible when it yields strata containing material culture demonstrably from some subdivision of the Ceramic Period associated with features containing datable charcoal, and/or faunal remains, etc. A stratified site with a few ceramic sherds and lithic flakes from a buried soil layer, but none of the associations under (c) above, is not eligible. A soil surface which was available for much or all of the Ceramic Period, and accumulated material culture items and features for much of the Ceramic period which cannot be clearly separated or associated on the basis of horizontal patterns, is not eligible.

F. Associated Property Types

I. Name of Property Type Habitation and Workshop Site

II. Description

Throughout prehistory and the Early Contact period, Maine's Native American population supported themselves primarily by hunting and gathering. Sociopolitical organization was relatively simple compared with some other areas of North America. There was no construction of monumental architecture. Life included a varying mix of sedentism and travel and was primarily focussed on waterways and shorelines. Craft specialization was relatively low-level, and craft activities occurred in and around habitation areas. Thus, any particular habitation site could have been used for short or long periods (a variable mix of sedentism and travel), and for a variable

III. Significance

Based on diagnostic artifacts and radiocarbon dates, aboriginal populations were present in the area covered by the Penobscot Headwaters Lakes multiple resources nomination beginning at least during the Late Paleoindian and subsequent Early and Middle Archaic periods. Late Archaic period components seem to be primarily Laurentian Tradition and Susquehanna Tradition in cultural affiliation. Much, if not all, of the subsequent Ceramic (Woodland) period, is represented.

One site (143.15) contains a fluted point Paleoindian component horizontally separated from other material at the same site. The same site meets Ceramic period eligibility criteria, hence its inclusion in this nomination. One site (143.79) contains an eligible Late Paleoindian component, and three sites contain components which are eligible under the

IV. Registration Requirements

Registration requirements vary slightly among the Historic Contexts presented above. A deeply stratified site is considered to be significant if one or more of its vertically separated components meets significance criteria presented in one or more Historic Context(s). Unless specifically excluded in the individual site nomination form by virtue of excessive disturbance (such as in a plowzone), all prehistoric or Contact Period components in a significant site are also significant, by virtue of the fact that they can contribute information to culture history (minimally) by relative stratigraphic placement and comparison with a significant and well dated component. A shallowly stratified, or non-stratified site is considered significant if one or more of its components meets significance criteria presented in one or more Historic Context(s). Unless areas of the site are specifically excluded in the individual site nomination form as not significant, then the entire site is considered significant.

Site 143.15 contains a Paleoindian component, which could be nominated under the Maine Fluted Point Paleoindian Sites Multiple Property document. However, it is included herein, because the site also contains much larger (in terms of area covered) significant Ceramic Period occupations.

See continuation sheet

See continuation sheet for additional property types

G. Summary of Identification and Evaluation Methods

Discuss the methods used in developing the multiple property listing.

The first organized archaeological work in the area covered by this Multiple Resource nomination was conducted in 1915 by Warren K. Moorehead, director of the R. S. Peabody Foundation, Phillips Academy, Andover, Massachusetts (Moorehead 1922: 227-228). Following Moorehead's research, little else is recorded about archaeology in the area until the mid-1960's. At that time, repairs to the North Twin dam gave Robert MacKay, a local resident and employee of Great Northern Paper, the opportunity to do an archaeological survey and make a collection of artifacts from aboriginal sites which had previously been inundated. MacKay carefully mapped site locations and recorded artifacts by site provenience, recording a total of 50 sites from Ambajesus, North Twin, South Twin, and Pemadumcook Lakes. In the early 1980's, archaeological survey was conducted in the Ripogenus Gorge area downstream of Ripogenus dam (Cox and Kite 1982, Cox and Beblowski 1985), just outside the area covered by this nomination.

The vast majority of the information used in the production of this nomination derives from hydroelectric relicensing archaeological survey conducted by the University of Maine at Farmington beginning in 1987 (Bartone et al. 1990, Nelson et al. 1991, Quinn and Petersen 1991).

See continuation sheet

H. Major Bibliographical References

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Primary location of additional documentation:

- State historic preservation office
 Other State agency
 Federal agency

- Local government
 University
 Other

Specify repository: University of Maine at Farmington

I. Form Prepared By

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mix of activities including subsistence practices, lithic and other tool preparation activities, etc. It is not possible to subdivide the general category of interior habitation and workshop site, at present, on the basis of length of stay or activity mix. The only site type exception to the rule of mixed habitation/domestic and craft activities that might be located in the area in future survey is the special case of a workable lithic material outcrop located on terrain not also suitable for habitation (because of precipitate topography and/or distance from navigable water). Such locations can be characterized as "quarry sites". An example would be the

_____ which listed in the National Register of Historic Places. We include sites which contain a high proportion of quarry and lithic reduction activity on a habitable spot near navigable waters in the general "Habitation and Workshop" site type.

So far as survey has progressed to date within the Penobscot Headwaters Lakes region, there are no cemeteries known as separate sites, nor are there petroglyph or other special purpose sites. Those few sites exhibiting evidence of early stage lithic reduction activity also seem to have included a habitation/workshop component.

The geological context of interior riverine and lacustrine sites varies from deeply (3 meters) to shallowly (less than 1/2 meter) or not stratified (all prehistoric cultural material in an active A/B soil). This continuum is caused by the variable rates of sediment deposition (or erosion) on various landforms, coupled with variation in the intervals between and intensity of human habitation. Again, we cannot divide the prehistoric sites, without making arbitrary distinctions. However, better stratified sites are more likely than poorly stratified sites to be National Register eligible under various criteria in the Historic Contexts presented above, because of better prehistoric component separation.

Consequently, for this Multiple Resource Nomination, at this time, we present one prehistoric property type: a generally defined Habitation and Workshop site.

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Early and Middle Archaic context. Late Archaic eligible components include four Laurentian (and/or one Moorehead phase) components, and three (or possibly four) Susquehanna tradition components. Ceramic period components which are eligible occur at 17 sites.

These sites, singly and as a whole, contribute information to many of the Research Significance Themes outlined in the State Plan, including topics of culture history, subsistence, settlement pattern, and transportation, travel trade and commerce. Further detail is presented in the Historic Contexts in this document, and in significance discussions in individual sites nomination papers.

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The site boundary and site content information used herein developed by the University of Maine at Farmington was generated using surface collection, mapping, and hand-tool subsurface testing in controlled grid context, with standard laboratory processing and analysis.

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