MIDDLE DORSET SETTLEMENT-SUBSISTENCE PATTERNS IN WESTERN NEWFOUNDLAND: A VIEW FROM BROOM POINT

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A thesis submitted to the School of Graduate
Studies in partial fulfillment of the
requirements for the degree of
Master of Arts

Department of Anthropology
Memorial University of Newfoundland
June [illegible]

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ABSTRACT

The reconstruction of Middle Dorset settlement-subsistence patterns along the west coast of Newfoundland's Great Northern Peninsula has been hampered in the past by lack of information concerning variation in site types. Research has tended to concentrate on the intensive investigation of a single site type, the large semi-permanent base camp, and little is known about the smaller Middle Dorset sites of an apparently temporary or seasonal nature that exist in the region.

Recent excavations at Broom Point, a small seasonal Palaeo-Eskimo site located in Gros Morne National Park, have succeeded in identifying at least two separate short-term Middle Dorset occupations in addition to an earlier, small Groswater phase component. The most prominent activity reflected in the Middle Dorset artifact assemblages from Broom Point relates to the manufacture and maintenance of stone tools, from the initial reduction of raw material (represented by a variety of local cherts) to the final stages of tool production. Other extractive pursuits, primarily marine related, and processing activities are also represented at the site, and seasonality is suggested as "non-winter," with Broom Point likely representing a repeatedly occupied summer site.

With regard to Middle Dorset settlement-subsistence

patterns along the west coast of the Northern Peninsula, it is postulated that Middle Dorset populations in this region of Newfoundland represent northern coastal hunter-gatherers, characterized by a settlement pattern that includes the establishment of semi-permanent base camps, from which a seasonal departure of at least a portion of the population took place in the summer to small, more mobile camps along the coast (in response to a combination of ecological as well as cultural factors), with populations returning to the large semi-permanent bases in the fall. It is suggested that Broom Point represents such a seasonal site, although the exact location of the large semi-permanent site that it was connected to is unknown at present.

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INTRODUCTION

Objectives of the Research

Prior to recent investigations undertaken at the Broom Point site (DlBl-1), research in western Newfoundland involving Middle Dorset occupations has tended to concentrate on the intensive excavation of large semi-permanent sites. Little consideration has been given to the examination of sites of an apparently temporary or seasonal nature, seriously inhibiting the interpretation of settlement-subsistence patterns among Middle Dorset populations in this region.

This thesis is concerned with alleviating the bias that exists in Middle Dorset archaeology in western Newfoundland towards the intensive examination of a single site type, the large semi-sedentary base camp. By focusing investigations on a small, apparently seasonal Late Palaeo-Eskimo encampment, as illustrated by the Middle Dorset component from the Broom Point site, it is hoped that 1) detailed information regarding the nature of a different Middle Dorset site type will be made available, and 2) the relationship between the large semi-permanent Middle Dorset sites and the smaller temporary sites of Middle Dorset affiliation will be further elucidated, as a result of the interpretation of the Broom Point site within the broader framework of probable Middle Dorset settlement-subsistence patterns in this region of

Newfoundland. Only after detailed information is available concerning specific lifeways can archaeologists compare the information with other relevant data to look for processes behind adaptations.

Definition of the Study Area

The west coast of the Northern Peninsula has been selected as the study area for a number of reasons. For one, until recently this section of the west coast has received more attention from researchers concerned with Palaeo-Eskimo occupations than any other part of the Island, with numerous survey programmes as well as excavations of single sites providing a more complete data base to draw from when attempting to establish relationships among site types. Secondly, the west coast of the Northern Peninsula is believed to represent a distinct physiographic and climatic subregion of the Island (classified as the Coastal Plain subregion of the Northern Peninsula Forest ecoregion in a recent ecological subdivision of Newfoundland), encompassing the flat coastal plain as well as the adjacent interior and western lower slopes of the Long Range Mountains within its boundaries (Damman 1983).

In contrast to the east coast of the Northern Peninsula, where the slopes of the Long Range Mountains rise from sea level to about 450 metres, and where rocky dwarf shrub barrens dominate the area in a narrow coastal strip, the west coast is characterized by primarily flat and undulating terrain

(Damman 1983), with a variety of shore types that include sandy beaches (and occasional dune formations), or else are comprised of gravel, cobbles, boulders or bedrock generally occurring at low elevations (Steele 1983). It is thought that the unique environment provided by the sand shores on the west coast (and to a degree on the south coast) of the Island allowed the development of a diversity of fauna and flora in these regions of Newfoundland (Steele 1983).

The east coast of the Northern Peninsula has not been included in the study area by virtue of these environmental differences, which seriously affect the nature of resources available as well as their scheduling in this particular portion of the Northern Peninsula. In addition, it is plausible that the Long Range Mountains may have proved an effective barrier to inland travel in prehistoric times, keeping populations on the west coast at least semi-isolated from populations on the east coast of the Northern Peninsula (as well as the northeast coast of the Island), although the apparent maritime adaptation of the Middle Dorset in Newfoundland indicates that contact with the east coast of the Northern Peninsula (and possibly utilization of this area by west coast groups) may have been easily maintained through coastal travel.

The remainder of the west coast of Newfoundland, south of Bonne Bay, has also been excluded from the study area. This decision is based partly on the environmental differences that exist today between the west coast of the Northern Peninsula and the southern portion of the west coast of Newfoundland, with the climate, and the nature and scheduling of resources being slightly divergent for the two areas, and partly a consequence of the fact that along the west coast of Newfoundland south of Bonne Bay the sea level has continued to rise since the prehistoric occupation of the area, seriously limiting the ability to undertake comprehensive settlement-subsistence studies in this part of Newfoundland (Simpson, pers. comm.).

Summary of Palaeo-Eskimo Traditions in Newfoundland and Labrador

A recent re-appraisal of current taxonomic classifications pertaining to Palaeo-Eskimo (or Arctic Small Tool) traditions in Newfoundland and Labrador by Tuck and Fitzhugh (n.d.) has resulted in the rearrangement of numerous formerly confusing and sometimes overlapping complexes, phases and cultures into two main traditions: the Early Palaeo-Eskimo tradition, and the Late Palaeo-Eskimo tradition, based on a concept proposed by Fitzhugh in an earlier review of Palaeo-Eskimo culture history in the southern Quebec-Labrador and Newfoundland regions (Fitzhugh 1980). Although detailed "trait lists" are not included here, a brief summation of the major changes in terminology as well as the relationship between the Early Palaeo-Eskimo and the Late Palaeo-Eskimo traditions in Newfoundland and Labrador (as currently viewed) is given (cf. Fitzhugh 1980; Tuck 1982a; Tuck and Fitzhugh n.d.).

The first arctic-adapted peoples to enter Newfoundland and Labrador are represented by the Early Palaeo-Eskimo tradition, which includes the previously termed Independence I and Early Dorset from Saglek in northern Labrador; Early Pre-Dorset, Pre-Dorset, Late Pre-Dorset, Transitional (or Terminal) Pre-Dorset/Groswater Dorset and Groswater Dorset from the Labrador coast; and Early Dorset from the Island of Newfoundland (Tuck and Fitzhugh n.d.). The earliest evidence of the Early Palaeo-Eskimo tradition in the Province comes from northern Labrador, where it appears sometime before 4000 B.P. During the next 2000 years the culture appears to spread gradually throughout most of Labrador and Newfoundland, disappearing from the Island around 2000 B.P. The Groswater phase marks the last major southward expansion of the Labrador Early Palaeo-Eskimo culture, representing the tradition's terminal manifestation (Tuck and Fitzhugh n.d.).

The earliest evidence pertaining to the appearance of the Late Palaeo-Eskimo (or Dorset) tradition in Newfoundland and Labrador also originates in northern Labrador, and like the Early Palaeo-Eskimo tradition before it, the Late Palaeo-Eskimo tradition appears to expand slowly southward, this time into those regions of central Labrador and Newfoundland formerly occupied by the Groswater phase Early Palaeo-Eskimo people. The Late Palaeo-Eskimo tradition can be separated into three phases in Newfoundland and Labrador: Early Dorset, not known from central or southern Labrador (as yet) but present in northern Labrador from 2600-2400 B.P., with a few Early Dorset artifacts recovered in Newfoundland dated to approximately 2000 B.P.; Middle Dorset, present from approximately 2000-1200 B.P. in both Newfoundland and Labrador (with the term Middle Dorset replacing the out-dated Newfoundland Dorset designation); and Late Dorset, known only from northern Labrador and dating approximately 1000-650 B.P., representing the last Palaeo-Eskimo people to occupy Newfoundland and Labrador (Tuck and Fitzhugh n.d.).

Although the transition between Groswater (Early Palaeo-Eskimo tradition) and Early Dorset (Late Palaeo-Eskimo tradition) in particular needs clarification, and a better definition for Early Dorset in Newfoundland is desirable, differences currently observed between the two traditions with regard to time, technology, settlement-subsistence patterns (with an apparent shift away from a relatively balanced land and sea adaptation to a more specialized utilization of marine resources among Late Palaeo-Eskimo groups) and raw material usage suggest that the Late Palaeo-Eskimo (or Dorset) tradition did not develop from the Pre-Dorset or Groswater Early Palaeo-Eskimo phases in either Newfoundland or Labrador. Rather, it is thought that Dorset culture developed in the Eastern Arctic, probably upon a strong Pre-Dorset/Independence II base, and that its presence in Newfoundland and Labrador is a result of a migration (or series of migrations) of Late Palaeo-Eskimo populations originating in this Eastern Arctic core area (Tuck and Fitzhugh n.d.).

Review of Palaeo-Eskimo Research in Newfoundland

Studies concerning the Palaeo-Eskimo occupation of Newfoundland began indirectly in 1927 and 1929 as a result of a series of reconnaissances undertaken by Jenness and Wintemberg along the west and east coasts of the Northern Peninsula (Wintemberg 1939, 1940). Although the surveys were designed in order to locate sites and burial places of Beothuk Indians on the Island, evidence for an Eskimo presence was noted by Wintemberg in sites from both coasts, even though at the time of the fieldwork Jenness assigned the sites (and the Cape Dorset culture) to an Indian context (Wintemberg 1939). The majority of the sites containing Eskimo material were found scattered along the northwest coast of the Northern Peninsula, from Port au Choix south to Bonne Bay (with a few sites noted from the east coast), and although the sites were surface collected and tested, excavations were confined to the Portland Creek site and Cow Head (cf. Wintemberg 1939). The fieldwork by no means represented a complete survey of the area, however, and Wintemberg himself noted that a more intensive search would doubtless reveal many other sites (Wintemberg 1939:85).

The first major investigation into the nature of the Palaeo-Eskimo occupation of Newfoundland was carried out in 1949 and 1950, and later from 1961-1964, by Harp along the west coast of the Northern Peninsula, with particular emphasis on the Port au Choix area (Harp 1964, 1976; Harp and Hughes 1968). Harp was concerned primarily with describing the Newfoundland aspect of the Cape Dorset Eskimo culture, and orienting it within the total known Dorset culture context (as seen from Hudson Bay, northern Labrador, Baffin Island and Greenland), and to achieve this he undertook a survey/testing programme, visiting potential and known sites along the west coast, using small boats as no overland transport was yet available (cf. Harp 1964). A series of extensive excavations were also carried out at the Phillip's Garden site, or Port au Choix-2 (Harp 1964, 1976). As a result of his research, Harp proposed a strong affinity between what he termed "the Newfoundland Dorset aspect and the parent complex," based on similarities of artifacts (although some differences were also noted); "all the major diagnostic traits of the parent appear in the offspring, together with numerous traits of a less distinctive nature. The relationship is unmistakable" (Harp 1964:138). It should be noted that, at the time of Harp's initial investigations, little previous work in Newfoundland or in the Eastern Arctic was available for comparison purposes.

A brief survey of parts of Newfoundland was undertaken in 1965 by Devereux, who also carried out a brief examination and collected sample artifacts from a large Palaeo-Eskimo site situated near the Cape Ray lighthouse on the southwest corner of the Island (Devereux 1966). The Cape Ray

Light site, as well as the Pittman site (located on Sop's Island, White Bay on the east coast of the Northern Peninsula) were excavated shortly after by Linnamae in 1967, with additional investigations being carried out in 1968 (Linnamae 1975). In her monograph, "The Dorset Culture: A Comparative Study in Newfoundland and the Arctic," Linnamae described the results of excavations at both of these Palaeo-Eskimo sites, and stressed the distinctive nature of the Dorset complex in Newfoundland, concluding that "the Newfoundland regional variant of Dorset culture developed because of cultural isolation in a geographically peripheral location with regard to the Dorset culture area" (Linnamae 1975:ii).

The excavation of a small, but productive, Dorset site in Englee on the east coast of the Northern Peninsula was carried out by Tuck in 1969 (Tuck 1976), and in 1972 Tuck undertook a survey of the proposed Gros Morne National Park region of the west coast of the Northern Peninsula (Tuck 1972 a,b). The purpose of the survey was to locate sites that might be destroyed by future park development, as well as to aid in the general interpretation of the prehistory of Bonne Bay. Coastal regions, river mouths, interior lakes and ponds, and other areas thought suitable for habitation were examined and tested, and a number of small Dorset sites were located along the coast (Tuck 1972a,b). By this time, a survey of Placentia Bay implemented by Linnamae in 1971 had also succeeded in locating several Dorset sites on the south coast of the Island (Linnamae 1971).

At the same time as the publication of Fitzhugh's comprehensive studies regarding cultural systems in Hamilton Inlet, Labrador (Fitzhugh 1972), the presence of traits belonging to an earlier Palaeo-Eskimo people (the Early Palaeo-Eskimo tradition) began to be recognized on the Island, adding to and confusing the presence of "typical" Newfoundland Dorset material. Carignan first noted the presence of early traits (thought to belong to an Early Dorset phase) in the Palaeo-Eskimo component from his 1972 and 1973 excavations at the multi-component Beaches site in Bonavista Bay, northeast Newfoundland (Carignan 1975), and Bishop stressed the similarity between the Palaeo-Eskimo collection recovered from investigations at Norris Point in 1973, and Fitzhugh's Groswater Dorset (Early Palaeo-Eskimo tradition) from Hamilton Inlet, Labrador (Bishop 1974). A series of excavations carried out by Tuck at Cow Head in the late 1970's confirmed the presence of Early Dorset material on the Island of Newfoundland, and Tuck noted that at the time there existed no counterparts on the Island, but that the collection resembled the early Dorset material from the Labrador coast (Tuck 1978: 139).

An increasing amount of information has become available in recent years regarding Palaeo-Eskimo occupations on the Island of Newfoundland (Tuck 1982a), and a refining process, resulting in the reorganization of terminology concerning

Palaeo-Eskimo populations in Newfoundland and Labrador (Tuck and Fitzhugh n.d.), represents a logical response to the amount of detailed comparative material that is now available. A number of surveys and excavations have taken place over the last decade in areas of Newfoundland that have been less than well documented by previous researchers, or hitherto ignored, including a series of surveys carried out by Penney (1979-1981) along the south coast of the Island. Penney noted the presence of Dorset material from various coastal locales in a 1979 survey of the Bay d'Espoir-Hermitage Bay area (Penney 1980), and located a number of Dorset sites during investigations in the Burgeo-Ramea area of the south coast in 1980 and 1981 (Penney 1982). Excavations at the l'Anse a Flamme site in 1980 also revealed a Dorset component in addition to Maritime Archaic, Early Palaeo-Eskimo and Little Passage material (Penney 1981). In addition, Pastore surveyed portions of eastern Notre Dame Bay in 1981, locating a number of small Dorset sites on islands in the Bay (Pastore 1982), and Evans' excavations at the Frenchman's Island site in southeast Newfoundland produced a small Dorset collection (Evans 1981).

The Factory Cove site, situated on the tip of Cow Head on the west coast of the Northern Peninsula, had been tested in 1978 by Tuck, and in 1981 formed the focus for Auger's investigation into the nature of the Early Palaeo-Eskimo tradition on the Island of Newfoundland. Auger's excavations resulted in the assignment of Factory Cove to a Groswater phase (Early Palaeo-Eskimo tradition), rather than an Early Dorset phase (Late Palaeo-Eskimo tradition) as previously suggested by Tuck, dated at approximately 2700-2150 B.P. (Auger 1983). In 1981 Robbins also undertook intensive excavations at a fairly large Middle Dorset site in Stock Cove, Trinity Bay, southeast Newfoundland. As a consequence of his investigations at Stock Cove, Robbins proposed a regional approach to the study of Dorset culture in Newfoundland, pointing out that recent research indicates that a uniform or "typical" Newfoundland Dorset culture does not exist on the Island, but that Dorset culture in Newfoundland varies, with the variants possibly following regional divisions (Robbins 1983, 1985).

Two small contract projects were carried out in 1982 by Auger, one at the Broom Point site on the west coast of the Northern Peninsula, and a second at Shamblers Cove in Bonavista Bay, northeast Newfoundland. The purpose of the Broom Point investigation was to retrieve additional information regarding Palaeo-Eskimo occupations at the site for an interpretative programme planned for Gros Morne National Park (Tuck 1982b; Tuck and Auger 1982), and the excavations will be discussed in detail in a later chapter of this thesis. The investigations at Shamblers Cove were of a salvage nature, designed to recover material threatened by the construction of the Shamblers Cove-Greenspond causeway, and resulted in the identification of a small Middle Dorset component at the site, possibly representing a special purpose seal hunting camp (Tuck 1983).

In 1983 an intensive survey of the Port au Port peninsula, located on the southern section of the west coast, was carried out by Simpson in an attempt to analyse settlement-subsistence patterns in a divergent physiographic environment; the majority of settlement-subsistence studies in Newfoundland and Labrador had been conducted in complex bay or fjord systems (Simpson 1984). Simpson located/re-located four prehistoric sites on the peninsula (as well as three chert outcrops), with the Port au Port site, previously discovered by Carignan in 1975, yielding extensive evidence of Middle Dorset occupation when tested (Simpson 1984, pers. comm.). An intensive multi-season programme of investigation was initiated in 1984 by Renouf in the newly designated Port au Choix National Historic Park, located on the west coast of the Northern Peninsula. To date investigations have included 1) a systematic survey of the Point Riche and Port au Choix peninsulas, in an attempt to locate and assess sites in the Park, 2) exploratory excavations undertaken at the recently discovered Point Riche site, as well as 3) a continuing programme of research concerned with Palaeo-Eskimo occupations at the Phillip's Garden site (Renouf 1985a,b,c; 1986). Additional excavations are planned for the 1986 field season at the Phillip's Garden site (Renouf, pers. comm.).

Chapter 2

ENVIRONMENTAL BACKGROUND FOR THE STUDY AREA

Environmental Setting

Geographical Location

The Broom Point headland extends into the Gulf of St. Lawrence on the west coast of Newfoundland's Great Northern Peninsula (Figures 1 and 2). It is located within the confines of Gros Morne National Park, approximately five kilometres south of the community of St. Pauls. This geographical position places Broom Point within the Coastal Plain subregion of the Northern Peninsula Forest ecoregion (Damman 1983).

As has been previously mentioned, the Coastal Plain subregion of the Northern Peninsula includes the flat coastal plain as well as the western lower slopes of the Long Range Mountains. Most of the coastal plain is occupied by ombrotrophic bogs, and forests are restricted mainly to the slopes of the Long Range Mountains and to an area of glacial till near Hawke's Bay (Damman 1983:182). Where the forests do occur, they are characteristic of a boreal forest/barrens ecotone, consisting of softwood stands of two major types, either 1) a varying mixture of balsam fir (*Abies balsamea*), black spruce (*Picea glauca*) and white birch (*Betula papyrifera*), with balsam most abundant and white spruce the least common, or 2) almost pure stands of black spruce, with few balsam fir (Mednis 1981:245).

Unfortunately, palynological data are lacking for the study area. Work done at L'Anse aux Meadows and environs on the tip of the Northern Peninsula, however, indicates that regional vegetation at 1000 B.P. in this area was little different from the vegetation of today, although an increase in the rate of peat accumulation at this time suggests somewhat milder conditions than in the immediately preceding or following centuries (Macpherson 1981:191).

Climate

Broom Point falls into the Northern Peninsula Climatic zone (Banfield 1983:50). Annual precipitation for this area is 900-950 mm near the coast, with a decrease in the Strait of Belle Isle region to 760-900 mm, and an increase to 1000-1150 mm over the hills (Banfield 1983). Precipitation is lower than other parts of the Island, with the exception of the Northern Shore ecoregion (Damman 1983). Winters are long and cold with continuous snow cover averaging up to three months in duration in the extreme north (Banfield 1983). The average number of days with snow cover is 150-180 days, a figure comparable to other regions on the Island (Damman 1983). Sea ice is generally found in the area from January until at least March (Gutsell 1949). Summers are short and cool with high average cloudiness, especially over the Long Range Mountains, and with occasional warm days near 25° C at coastal locations during offshore airflow (Banfield 1983). The frost-free season is comparable to or longer than central Newfoundland, although the vegetative season ranges a brief 110-150 days; only the Strait of Belle Isle region and areas of extreme high elevation have shorter growing seasons (Damman 1983). The major climatic gradient is south to north, with temperatures becoming progressively colder at all times of the year towards the northern part of the peninsula (Banfield 1983).

Physiography and Geological Evolution

The northeasternmost limit of the Appalachian mountain system in North America is found in the Long Range Mountains of the Northern Peninsula. Four Appalachian tectonic zones have been recognized for the system in Newfoundland: the Humber, Dunnage, Gander and Avalon zones (Rogerson 1983). The Northern Peninsula and the entire west coast of Newfoundland fall into the Humber zone, or west continental platform.

Exposed along the central spine of the Northern Peninsula is an outlier of Grenville Gneiss, part of the latest Precambrian tecto-stratigraphic unit found in Labrador, which may have formed at plate margins during continental collision. This Grenville basement is partly overlain by clastic sediments, lavas and a Cambrian-Ordivician carbonate platform sequence. Around the exposed Grenville, the carbonate platform is disturbed and overlain by allochthonous (*i.e.*, tectonically transported) sequences, containing continental sediments, shales mélange and uppermost of all, ophiolotic suites of mantle periodotites and ocean crust volcanics. The allochthonous sequences were assembled in the east at a time when the continental margin was isostatically depressed. The ophiolites were rafted over the continental margin on top of pre-assembled sedimentary slices; westward transportation of the piles took place by gravity-sliding as the eastern margin of the continent was uplifted (Rogerson 1983).

A long period of erosion and stability during the Mesozoic and the Cenozoic led to the development of extensive land surfaces over Newfoundland, producing plains of low relief, termed peneplains, recognized as present day upland surfaces. The Long Range peneplain (approximately 650 m asl) formed the dominant plateau surface in the Long Range Mountains, with summits such as Gros Morne (806 m asl) representing minor irregularities on the surface. Glaciation during the late Cenozoic caused profound modifications of the land surface locally, and on a broad scale removed virtually all soils built up since Mesozoic times. Upland surfaces were deeply cut by the selective erosion of ice streams. The glacial geology of the Island is still little understood (Rogerson 1983).

The last, late-Wisconsin glacial maximum terminated approximately 7000 B.P. on the Island of Newfoundland (South 1983:2), although deglaciation may have begun to occur much earlier in various areas of the Island (see Rogerson 1983:

23). After deglaciation, the plants and animals which spread over the Island occupied a landscape essentially Paleozoic in origin, cleaned of weathered detritus by glacial scouring (Rogerson 1983:30).

Isostatic Rebound

The late-Wisconsin ice caused an isostatic downwarping of the earth's crust, and during the thinning of the ice in deglaciation, the crust rebound was in proportion to the thickness of the ice which had covered it. Some record of the amount of rebound remains in the elevation of raised beaches and deltas above present sea level, although reconstruction of the pattern of rebound from the elevation of shorelines is fraught with difficulties (Rogerson 1983:46). In addition, the isostatic rebound must have been greater than the volume of water produced by the melting glacier for raised beaches to occur.

Isostatic uplift of the west coast of the Northern Peninsula has been taking place since about 13,000 B.P., with a small halt as the ice readvanced briefly at 11,000 B.P. (Grant 1972). At Trout River, near Bonne Bay, approximately 70 kilometres south of Broom Point (Figure 1), a raised marine bench and sea stack (35 m asl) is observable. The rock-cut bench accords in height with a broad deltaic deposit which fills the head of the bay (Rogerson 1981:48), and indicates that the present sea level is lower than it once was due to isostatic rebound following deglaciation. This is important archaeologically, as it negates the likelihood of drowned sites in the study area.

Potential Resources (Table 1)

Terrestrial Mammals

The mammalian fauna of Newfoundland is small in terms of species represented, with a predominance of large northern animals (South 1983). There are fourteen species of land mammals indigenous to insular Newfoundland, one of which, the Newfoundland wolf, is extinct. An additional thirteen species have been introduced either on the Island itself or to smaller islands offshore (Dodds 1983). Two species, the polar bear and the arctic fox, are also infrequent visitors from Labrador, and there is some evidence indicating that two additional members of the weasel family, the wolverine and the sea mink, might have been present in former times (Dodds 1983).

The low number of species is thought to be the result of an effective water barrier separating the Island from the mainland. The indigenous species would have crossed ice bridges during the time of the last glaciation, or arrived on drift or pack ice a short time later (Northcott 1974). Of the fourteen native species, nine have been identified as endemic subspecies peculiar to Newfoundland, and this argues for colonization a short time after glaciation in order to explain the rapid subspeciation (Cameron 1958). Prior to European settlement, the native animals probably fluctuated in both numbers and distribution along with long-term and short-term changes in climate, in addition to annual weather and density dependent factors (Dodds 1983).

The following discussion will deal with only the indigenous and visiting species. Chiroptera (bats) have been excluded from discussion due to the probability that they would have been unimportant economically to the prehistoric inhabitants of the study area.

Summary of indigenous and visiting land mammals:

Common Name	Scientific Name
little brown bat	Myotis lucifugus lucifugus
eastern long-eared bat	M. keenii septentrionalis
arctic hare	Lepus arcticus bangsii
beaver	Castor canadensis caecator
meadow vole	Microtus pennsylvanicus terraenovae
muskrat	Ondatra zibethicus obscurus
Newfoundland wolf	Canis lupus beothucus
arctic fox	Alopex lagopus ungava *
red fox	Vulpes vulpes deletrix
black bear	Ursus americanus hamiltoni
polar bear	U. maritimus *
weasel, ermine	Mustela erminea richardsonii
marten	Martes americana atrata
otter	Lontra canadensis degener
lynx	Lynx lynx subsolanus
caribou	Rangifer tarandus caribou

* non-breeding, seasonal visitors

Arctic Hare

The arctic hare reaches its southernmost extension in North America in Newfoundland. Its present distribution is restricted to the northern Long Range Mountains, where it prefers rocky slopes and occasionally open upland tundra or level barren-ground (Northcott 1974). At one time, however, the arctic hare occurred throughout much of the Island, occupying large sections of subalpine and alpine habitats. A decline in arctic hare over the past hundred years and the restriction of its once wide-ranging habitat is thought to be related to interspecific competition arising from the introduction of the snowshoe or varying hare from Nova Scotia sometime between 1864-1876 (Bergerud 1967). It is also possible that the reduction in numbers is due to an increase in the lynx population, which has also been connected to the introduction of the snowshoe hare (Bergerud 1967).

In 1878, Tocque noted that the arctic hare were present "...in great numbers on the west and north coasts of the island" (Tocque as quoted in Cameron 1958:75). The animals are quite gregarious and are sometimes observed in large groups. In the past they exhibited relatively high densities (Dodds 1983), although today they occur in low densities and as scattered distributions of populations (Bergerud 1967). The young are born in June or July, although 2-3 litters consisting of 2-3 young may be produced in a single year. The arctic hare is larger than the snowshoe hare, weighing between 3.4-4.9 kg. Arctic hare are important among Arctic populations as a food source as well as for their fur (Northcott 1974). Arctic hare occur in the faunal assemblage from Factory Cove, an Early Palaeo-Eskimo (Groswater phase) site located a few kilometres north of Broom Point (Auger 1983).

Beaver

Beaver are distributed throughout most parts of the Island and have been recorded and trapped in the study area (Mednis 1981). At present they are rare in the Codroy Valley and on the northern tip of the Northern Peninsula, in the Port Saunders area (Cameron 1958). Beaver are usually found along wooded streams and lakeshores, and prefer a habitat with slow meandering streams and plenty of trembling aspen and alder (Northcott 1974). They also occur on the barrens and in marsh areas, where they feed on the tubers of the yellow pond lily and utilize tuckamore and black spruce in construction in place of the deciduous tree varieties. It has been noted that the beaver populations on the Island move more frequently than beaver on the mainland, perhaps due to the scarcity of preferred food trees (Cameron 1958).

Fall is the most active time for beaver, and in winter activity is reduced, being limited to travels between the lodge and the food pile. Beaver weigh between 13.6 - 28.1 kg when mature (Northcott 1974), and are valued for their pelts and teeth, and as a food source (Cameron 1958). Beaver occur in the faunal assemblage from Factory Cove as well (Auger 1983).

Meadow Vole

The meadow vole or meadow mouse is the only small rodent native to the Island and hence plays an important role in predator-prey relationships. It is not restricted to the grasslands, but occurs in swamps and woodlands as well (Cameron 1958), although it is less common in forested areas, with the exception of peaks in populations occurring every four years (Dodds 1983). Meadow vole have been recorded for the study area (Mednis 1981), and have an average weight of 0.02 - 0.08 kg (Northcott 1974). It is not known if the meadow vole played any economic role in the diets of prehistoric populations in the study area, although it may have been a "starvation" food. It has been included for discussion by virtue of its importance in the food chain for other carnivores and omnivores.

Muskrat

The muskrat is distributed fairly evenly throughout the Island. It is more abundant in the marshes and streams of the drainage basins, although a few rats do occur in rocky lakes and ponds of the barrens, and can usually be found wherever aquatic vegetation exists, where they subsist on tubers of pond lilies, weeds and sedges. Migrations among Newfoundland muskrats are frequent and the muskrat has yet to obtain the population densities of those on the mainland, probably due to the absence on the Island of cattail, a major food source. Muskrat have been noted as being particularly scarce in the Port Saunders region of the Northern Peninsula (Cameron 1958). Elsewhere on the Northern Peninsula the conical grass/reed house associated with the muskrat can occasionally be seen, although such structures are rare in general on the

Island. Muskrat weigh between 0.81 - 1.58 kg when mature, and are valued for their fur, often referred to as "Hudson seal" in historic times (Northcott 1974).

Newfoundland Wolf

The Newfoundland wolf is thought to have been a southern relict of the Arctic white wolf (Cameron 1958). It was common throughout the Island from the time of settlement to the latter part of the nineteenth century, but never occurred in large numbers (Dodds 1983). In 1839 an Act was passed encouraging the killing of the Newfoundland wolf; in 1906 it was rare, and by 1913 the Newfoundland wolf was extinct (Cameron 1958). It has been postulated that the reason why the numbers of the Newfoundland wolf were never great in insular Newfoundland was because a large enough food supply was not available to support large populations of this predator (Northcott 1974). It is likely that the Newfoundland wolf, with its affinity to the tundra wolf, arrived on the Island via drift or pack ice in much the same way as the arctic fox and polar bear still do today (Cameron 1958).

Arctic Fox

Arctic foxes are trapped occasionally in the spring along Newfoundland coasts, but breeding populations have never been reported (Dodds 1983). Arctic fox have been sighted in the study area (Mednis 1981). Drift and pack ice probably provide the vehicle by which the animals reach the Island

(Northcott 1974).

Red Fox

The red fox is one of the main species of fur-bearing land animals trapped in the study area today (Mednis 1981). The size of the fox population appears to be directly connected to population fluctuations in voles and hares, on which the fox prey heavily. In the summer, fox have been reported whelping on the upland barrens where they feed on ptarmigan and mice (Cameron 1958). Generally, the red fox occupies a variety of habitats, preferring mixed cover. They are opportunistic feeders (Dodds 1983) and will subsist on fruits and berries if nothing else is available. A mature fox can weigh between 3.6 - 6.8 kg (Northcott 1974). Red fox was identified in the Factory Cove faunal assemblage (Auger 1983).

Black Bear

Black bear are common and widely distributed throughout the Island (Cameron 1958), and have been reported and hunted in the study area (Mednis 1981). They are usually solitary animals, but concentrations may occur at specific points along salmon streams in the fall, where dead salmon may occur or where they can be caught as they ascend the rivers to spawn. In midsummer black bear feed on berries where available, and in the fall will travel great distances to feed on blueberries, partridge berries and bakeapples (Dodds 1983). In Newfoundland the black bear den up in late

November to early December and emerge in late March or April. They can weigh from 90.7 - 259.9 kg, and are considered to be a good meat animal, in addition to the value of their hides and their fat content (Northcott 1974).

Polar Bear

Polar bears are not resident on the Island, but are carried south from Labrador occasionally on ice floes, and occur at times along the coast. There are no records to suggest that they summer in Newfoundland. A polar bear was killed at Port au Choix on the Northern Peninsula in the spring of 1936, but this is the only record from the northwest coast. This is probably due to the fact that most polar bears are carried on ice floes travelling south along the northeast coast of the Island; the west coast of Newfoundland is washed by north-flowing currents from the Gulf of St. Lawrence that tend to restrict the number of ice floes entering the study area (Cameron 1958).

Weasel or Ermine

The short-tailed weasel or Richardson's ermine is not particularly common on the Island today, but was abundant once according to early writers (Cameron 1958). It occurs throughout insular Newfoundland in fairly low numbers, preferring a forested habitat. The males weigh approximately 0.08 - 0.26 kg, and the females 0.06 - 0.10 kg (Northcott 1974). The weasel was not important to trappers during historic times (Dodds 1983).

Marten

The pine marten once occurred throughout most of the Island, with the exception of the northern part of the Northern Peninsula (Northcott 1974), and were apparently abundant in historic times (Dodds 1983). They are now rare (Cameron 1958), preferring mature coniferous forests in the vicinity of water, such as occur in western Newfoundland (Northcott 1974). A number have been trapped in the study area (Mednis 1981). The males usually weigh 0.5 - 2.0 kg, and the females 0.45 - 1.2 kg (Northcott 1974).

Otter

The otter occurs in low to moderate numbers in Newfoundland lakes and coastal regions (Northcott 1974), and in streams and lakes in the wooded parts of the Island (Cameron 1958). They are largest in the coastal regions where food is adundant, weighing 4.5 - 13.6 kg, with low but stable population levels (Northcott 1974). It is thought that the otter from the interior rivers move downstream to salt water bays in the winter (Dodds 1983). The otter is prized for its valuable pelt (Cameron 1958), and otter have been recorded in the study area (Mednis 1981).

Lynx

The lynx is also one of the main species trapped in the study area (Mednis 1981). Lynx are distributed over the

Island, and have apparently increased in population with the introduction of the snowshoe hare (Cameron 1958; Bergerud 1967). They occur in moderate numbers, preferring a pure coniferous forest habitat, although they do occur in marshy areas, and wherever there are arctic or snowshoe hare. Weight ranges from 5.0 - 17.2 kg (Northcott 1974).

Caribou

Caribou are mentioned more frequently in the historical literature than any other Newfoundland animal. Once thought to be a distinct Newfoundland subspecies, Rangifer caribou terraenovae, Banfield revised the genus in 1961 to Rangifer tarandus caribou; woodland caribou of the boreal forest region (Dodds 1983:527). In general, woodland caribou are gregarious animals, larger and darker than their barren-ground relatives. They inhabit both the barren open areas and the areas of coniferous forest in Newfoundland, and feed primarily on lichen (Northcott 1974). Caribou reach full maturity at five years and live twelve to fifteen years (Northcott 1974). The stag weighs from 136.1 - 226.8 kg, and the doe is smaller, although there is great variation in both (Cameron 1958). The Newfoundland caribou are said to be more migratory than other woodland caribou (Cameron 1958), and may have crossed into insular Newfoundland as early as 18,000 B.P., possibly by a land or land-water connection during an extended fall migration. The mainland and the Island caribou may have existed as a single population at this time

(Dodds 1983:538).

Historically, the caribou population on the Island consisted of three distinct groups: one in the north in the Long Range Mountains; a second, main herd inhabiting the central and southern parts; and a third small, apparently non-migratory herd on the Avalon Peninsula (Cameron 1958). By 1960, the calving herd (consisting of does, yearlings and new-born calves) in the Long Range Mountains was estimated to be 66 in number (Bergerud 1961:3). Other population estimates of the combined herds include 150,000 as a conservative estimate in 1913 (Dugmore as quoted in Cameron 1958:104); 40,000 in 1900; 2000 in 1930; and an increase in recent years to 15,000 - 20,000 in 1973 (Northcott 1974).

With regard to all of the herds, breeding takes place on the open bogs and barrens in the fall (Bergerud 1961). During October, stags and does come together to form rutting companies, resulting in an increase in herd size (Bergerud n.d.), sometimes up to 1000 animals (Northcott 1974). Bergerud noted for 1957 and 1958 that breeding took place in the interval between October 11-17th, and that it appeared from earlier records that the breeding habits of fifty years prior to this were similar (Bergerud 1961:7).

The fall migration of the Long Range Mountain herd is fairly well documented, and it follows close on the heels of the breeding season, usually occurring between October 20th and November 5th, dependent on the weather; heavy snowfall is usually a signal to start (Cameron 1958). Documentation of migration patterns for other herds is unfortunately lacking. The fall migration is not as leisurely as the spring migration, and the caribou move quickly to the open plains of the south coast and the barrens (Bergerud n.d.). Presumably not all migrate, as a few caribou have been observed in midwinter in the Long Range Mountains (Cameron 1958). Herds range from 3-4, to 100 animals, and generally move by day (Cameron 1958).

During the winter, the caribou band together on the south coast of Newfoundland in smaller groups of 2-3 animals, up to companies of 30-40. Once they are located, Bergerud noted, one is apt to see other companies within an area of several hundred square miles (Bergerud n.d.). They are constantly on the move seeking food. The males lose their antlers in December or January, the females and juveniles not till March or April (Cameron 1958).

With the melting of the snow in April, the Long Range Mountain caribou move north on their spring migration (Bergerud n.d.). They head for calving grounds on the plateaus and ridges of the interior (Northcott 1974); the same calving grounds are used each year by the caribou (Bergerud 1961). Calves are born about June 2-15th, having had a gestation period of 227 days (Bergerud 1961). When the flies emerge, the caribou are often found on the shaded sides of the mountains, where the patches of melting snow make them conspicuous against a white background (Cameron 1958). During the hot weather of summer, they find relief from flies on the tops of hills and other open places where the strong winds prevent the flies from bothering them (Bergerud n.d.).

It is not known whether the caribou in the Long Range Mountains have ever utilized the coast in the summer, although it is possible that they may have done so in the past; the strong coastal winds would likely be effective in greatly reducing flies at that time of year. With regard to modern day hunting practices, Cameron noted in 1958 that hunters from Port Saunders headed for a particular area around Mount Bluie in the Long Range Mountains to hunt for caribou in late October and November. The peak, approximately 32 kilometres inland, can be seen quite clearly from the coast (Cameron 1958:105). Caribou bone has been identified in the Factory Cove faunal assemblage (Auger 1983), and has been recovered in substantial amounts from excavations at Phillip's Garden on the west coast of the Northern Peninsula (Harp 1976; Renouf 1986).

Marine Mammals

Marine mammals available off the west coast of Newfoundland that come close to shore include one local resident, the harbour seal (*Phoca vitulina concolor*); two migratory species, the harp seal (*P. groenlandica*) and the hooded seal (*Cystophora cristata*); one summer visitor, the grey seal

(*Halichoerus grypus*); two occasional visitors, the ringed seal (*Phoca hispida*) and the bearded seal (*Erignathus barbatus*); as well as the walrus (*Odobenus rosmarus*) in historic times, and some of the smaller varieties of whales, such as the pilot or pothead (*Globicephala melaena*) and the minke whale (*Balaenoptera acutorostrata*).

Harbour Seal

The harbour or bay seal is a coastal species that prefers the quiet waters of bays and inlets to the open ocean (Beck 1983a). In eastern Canada the harbour seal are usually found in small isolated populations around inlets, islets and reefs where they take up permanent residence (Boulva and McLaren 1979). Harbour seal are common on the west coast of Newfoundland (Mansfield 1967:6), although in a survey done in 1973, the total for Newfoundland was estimated as a mere 2000 individuals (Beck 1983a).

Whelping occurs onshore during late May in the Gulf of St. Lawrence and environs (Boulva and McLaren 1979). The seal haul out onto sandbanks and mudflats in river estuaries, as well as on reefs and rocky islets along the coast to give birth to a single pup (Mansfield 1967). In the summer and autumn the harbour seal often haul out to sun and sleep in small herds on beaches or on the inshore rocks (Boulva and McLaren 1979; Beck 1983a). They will also haul out if the onshore winds are causing high surf. The herds observed on Sable Island off Nova Scotia haul out in the hour before sunrise, and nearly full-sized herds are observable one and a half hours after sunrise; some individuals were recognized hauling out in the same area day after day during the summer (Boulva and McLaren 1979). Where there are no beaches, hauling out is related to tides, when reefs, rocks and sandbars become exposed. Herds off Nova Scotia have been observed using exposed algae-covered rocks at low tide during the spring, summer and autumn (Boulva and McLaren 1979).

Although the harbour seal appear to leave the coast in the winter, their apparent absence can be explained by the fact that they are loath to haul out in winter; some can be seen in the water along the beaches and will haul out occasionally on warm days in the late winter and early spring (Boulva and McLaren 1979). In addition, harbour seal do not maintain breathing holes, even in the Arctic, and must remain off the edge of the <u>sina</u> if landfast ice forms.

The harbour seal is the smallest seal in the Atlantic Provinces, with a maximum weight of 100.0 kg. Historically, the Inuit highly prized the pelt of "Kasigiak," although its value is thought to have been prestigious rather than economic, due to the rarity of the harbour seal in the Arctic (Beck 1983a:5). Harbour seal have been identified in the faunal assemblage from Factory Cove (Auger 1983).

<u>Harp Seal</u>

The harp seal is a gregarious, migratory species of seal, present in the study area for only a brief period of time twice a year. Fossil remains indicate that the harp seal may have existed in areas of the North Atlantic as far back as the mid-Miocene (Bowen 1985). Common names include the Greenland seal, the saddle seal and the saddleback seal. The Northwest Atlantic harp seal is thought to be genetically different from eastern stocks, and can be divided into two herds, 1) the Front herd, which breeds on the southward drifting Arctic pack ice off southern Labrador, and 2) the Gulf herd, which breeds on the ice in the Gulf of St. Lawrence near the Magdalen Islands. It is the Gulf herd which is important to the study area (cf. Mansfield 1967; Bowen 1985).

The harp seal haul out on the winter pack ice in dense herds to bear their young, whelping at slightly different dates in different regions, according to the onset of spring (Sergeant 1985). In the Gulf, the ice begins to disappear by mid-March, and for the pups to survive they must be born earlier than at the Front, usually in late February or early March. The herds may appear as patches on the ice, from 20 to 200 square kilometres in size, containing as many as 2000 adult females per square kilometre (Bowen 1985).

Unlike the Front herd which remains off the northeast coast of Newfoundland and Labrador, drifting along with the moving pack ice and swimming north by stages, the Gulf herd remains in the Gulf of St. Lawrence breeding grounds near the Magdalen Islands until late April, moulting in the open water (Mansfield 1967:13), after which they begin to migrate north to summer feeding grounds in the Arctic, following the receding pack ice. It is during this migration that the harp seal pass by the west coast, often coming close to shore. They reach Greenland in early to mid-June, where they join with the Front herd. In late September, when the new Arctic ice is forming, the harp seal begin their movement back out of the Canadian archipelago, with the first migrants reaching northern Labrador in mid-October to late October, and the Strait of Belle Isle by mid-December. Here the herd separates, with one third of the population going into the Gulf, and the remainder moving down the northeast coast of Newfoundland. This time the seal do not pass close by the shore, and during January and February they disperse widely (Bowen 1985).

Adult harp seal are 85.0 - 190.0 kg in weight, with the female being slightly smaller than the male, and the normal life span is 35 years (Bowen 1985). Large numbers can be taken along the west coast by hunters in some years, on foot or in small crafts, when the ice brings the seals close to shore during the spring migration north (Mansfield 1967). A reduction in stock size has been noted from 2.5 - 3.0 million in 1950, to 1.5 million in 1970 (Bowen 1985). Harp seal bones occur in great numbers in some sites along the west coast, including Factory Cove (Auger 1983), and Phillip's Garden (Harp 1976; Renouf 1986).

Hooded Seal

The hooded or bladdernose seal have breeding grounds in both the Gulf and the Front. They whelp in the early spring on the heavier pack ice to the west of the harp breeding grounds (Mansfield 1967), and their breeding can be pinpointed to the second half of March wherever they occur, with a peak about March 17th (Sergeant 1985). They occur in large but widely scattered groups or families on the ice during whelping, after which they migrate north to Greenland, arriving in late April or early May, and returning to the Gulf in September (Mansfield 1967). Many of the animals in their first summer remain in the Gulf, living over deep water and diving to considerable depths to feed. They are scarcer than the harp seal in the Gulf, with an estimated 1000 animals in the breeding population. This may be explained by the fact that the Gulf has only a single deep channel, and the hooded seal are deep water feeders. Males weigh an average of 400.0 kg, and females 270.0 kg (Sergeant 1985). The hooded seal occasionally stray close to the shore along the west coast of the Island.

Grey Seal

The grey seal is also known as the Atlantic seal, horsehead, phoque gris, hopper and cowmore (Beck 1983b). It is a gregarious species which forms large concentrations during a well defined breeding season (from mid-December to early February) when pups are born on islands or land-fast ice. The grey seal does not breed in the study area; breeding grounds are confined to the Maritimes. However, known summer feeding grounds on the west coast of the Island include the Port au Port bay and environs in the south, and it is extremely likely that additional feeding grounds once existed further north in the Broom Point area (Mansfield 1967).

These summer groups include mostly young seals of the year, "those and other immature animals account for most of the annual kill of grey seals in Newfoundland and Labrador" (Mansfield 1967:10). Occasionally, grey seals find their way north to Labrador, and their presence has been noted in the Strait of Belle Isle (James A. Tuck, personal communication). The adult male is the largest of the Atlantic seals, weighing up to 450.0 kg, with the female a good deal smaller at 270.0 kg (Beck 1983b).

Ringed Seal

The ringed seal, or jar, is a northern coastal species which, although occupying a wide habitat, does not disperse very far offshore (McLaren 1962). The ringed seal inhabits all northern waters where stable ice is found during the winter and spring months, occasionally making an appearance along the lower north shore of the Gulf of St. Lawrence and northeastern Newfoundland (Mansfield 1967). The ringed seal represents an occasional visitor to the west coast of the Island, occurring on drifting ice in the spring (Templeman 1966). Ringed seal has been identified in the faunal assemblage from the Factory Cove site (Auger 1983).

Bearded Seal

The bearded seal, or square flipper, is found in open water in the Arctic year-round, whelping on the pack ice in April and May. A few stray bearded seal reach as far south as Newfoundland, mainly along the northeast coast, where they whelp at a slightly earlier date (Mansfield 1967). They occasionally appear on drifting ice in the spring in the study area (Templeman 1966). Bearded seal has also been identified in the faunal assemblage from Factory Cove (Auger 1983).

Walrus

The walrus is a highly gregarious animal that is associated with pack ice for most of the year, on which it hauls itself out to rest and breed. It is a northern circumpolar species which rarely strays further south than the average spring limit of the pack ice (Mansfield 1967). In recent times, however, walrus were apparently abundant and widespread, and breeding herds were recorded as far south as Sable Island off the coast of Nova Scotia as well as the Magdalen Islands in the Gulf;

> The depredations of the early seafarers had exterminated the walrus at these two places by the end of the eighteenth century, and then the pursuit extended into more northerly waters...the large Greenland whale or Bowhead *Baleena mysticetus* was nearly exterminated, and then the whalers turned their attention to the less profitable but easily obtainable walrus (Mansfield 1959:1).

Whales

While a wide variety of large whales is present in the waters off Newfoundland (the blue, finback, humpback, sei, sperm, baleen and the right whale), the majority occur off the northeast coast of the Island and in Labrador waters. Of those that are present in the Gulf of St. Lawrence, few come close to the west coast of Newfoundland (Templeman 1966). However, they may have been more plentiful in the study area in the past, and may have occasionally washed up onshore.

The smaller whales (the pilot or pothead and the minke whale) occur in large numbers in the waters off the west coast of Newfoundland, and would have been more likely candidates for exploitation by prehistoric populations. Pilot whale herds of between 10 and 200 animals are known to follow their leader, and are susceptible to natural strandings as well as to being driven ashore in complete herds (Templeman 1966). Artifacts made from whalebone have been recovered from recent excavations at Phillip's Garden (Renouf 1986).

Other Marine Resources

While Newfoundland is renowned for its rich fishery, the majority of the species are concentrated in and around the Grand Banks and off the northeast coast of the Island. In dealing with the west coast there is a pronounced scarcity of species, especially in the autumn and winter, that come close to the shore (Templeman 1966:91). Those species that do occur include four species of Atlantic groundfish, represented by atlantic cod (Gadus morhua), atlantic halibut (Hippoglossus hippoglossus), redfish (Sebastes mentella) and winter flounder (Pseudopleuronectes americanus); five species of Pelagic fish, represented by herring (Clupea harengus harengus), mackeral (Scomber scombrus), bluefin tuna (Thunnus thynnus), capelin (Mallotus villosus) and smelt (Osmerus eperlanus mordax); three species of salmon and trout, represented by atlantic salmon (Salmo salar), brook trout (Salvelinus fontinalis) and arctic char (S. alpinus); as well as a variety of less common fish such as eel (Anguilla rostrata), spiny dogfish (Squalas acanthias), skates (Raja spp.) and lumpfish (Cyclopterus lumpus). In general, the fish present are solitary in nature, with concentrations occurring for some species during spawning in the spring and summer, when the fish gather in great numbers in the shallows or at river mouths. The more common fish will be described below.

In addition, the west coast supports a wide variety of Atlantic shellfish, including crustaceans such as the american lobster (Homarus americanus), pink shrimp (Pandelus borealis), snow crab (Chionoecetes opilio) and rock crab (Cancer irroratus); as well as molluscs such as squid (Illex illecebrosus), sea scallop (Placopecten magellanicus), soft-shelled clam (Mya arenaria) and bar or surf clam (Spisula solidissima). It is interesting to note that in northern environments there tends to be a much greater concentration among hunter-gatherers on sea mammals and fish, and correspondingly less attention paid to shellfish, particularly north of the boundary of winter ice (Yesner 1980). A variety of seaweeds such as Irish moss, rockweeds, kelps and red seaweed are also present in the study area (Templeman 1966). Most of these resources are available in shallow water near the shore.

Atlantic Cod

Atlantic cod move in schools from deep to shallow waters in seasonal cycles (Communications Directorate 1983). Along the west coast of Newfoundland, cod concentrations appear in late May, when large numbers rise to the surface and may approach the shore, following after the herring and capelin. The cod live in less than ten to fifteen fathoms of water at this time of year, and can often be caught in shallow traps or by using handlines. These dense schools disappear in September and the cod move offshore, overwintering along the southwest coast of Newfoundland (Templeman 1966). Mature cod do not usually exceed 30.0 kg, and most average 2.0 - 3.0 kg in weight (Lear 1984).

Atlantic Halibut

Atlantic halibut come into shallow water along the west coast of Newfoundland in the summer (Templeman 1966). They average from2.3 kg to over 56.0 kg in weight, and represent the only flatfish available in the area close to shore (Comm. Dir. 1983).

Redfish

Redfish, or ocean perch, are also available in the Gulf of St. Lawrence area, where they frequent the deep water gullies and slopes of the continental shelf below 100 fathoms (Templeman 1966). They generally weigh an average of 0.5 kg and rarely come close to shore (Comm. Dir. 1983).

Winter Flounder

Winter flounder are common in Newfoundland waters, being especially available along the west coast close to shore at capelin spawning time (Templeman 1966). The average weight is 1.4 kg, and the winter flounder can be easily caught using a handline (Comm. Dir. 1983).

Herring

Herring are available in large numbers in the spring during spawning time. Today, the centre of the herring fishery is on the west coast, where the fish spawn mainly from mid-May to mid-June in the shallow water near the shore (Templeman 1966).

Mackeral

The mackeral is a moderately-warm water fish which may appear in small numbers along the west coast in certain years. The southern Gulf is usually its northern limit for spawning. Mackeral can be caught at the mouths of coves (Templeman 1966).

Bluefin Tuna

The bluefin tuna, or horse mackeral, has been reported at times close to shore in the bays of the west coast. Bluefin tuna represent rare summer migrants, weighing an average of 204.1 kg, that can be easily harpooned (Templeman 1966).

Capelin

Capelin are the most important forage fish in the Northwest Atlantic. They occur on the east coast of North America, but are most abundant around Newfoundland and Labrador. The bulk of their lives is spent offshore (Carscadden 1981), but in summer they move inshore and spawn on sand or gravel beaches (Templeman 1966). On the west coast of Newfoundland, spawning begins in late May, and is progressively later to the north. Capelin prefer waters 5.5 - 8.5° C for spawning, and with few exceptions, spawn at night or on dull, cloudy days (Carscadden 1981). Cod, salmon, squid and a variety of sea birds will follow the capelin inshore on feeding migrations (Steele 1983).

Smelt

Smelt are found in river estuaries anytime from September or October to May, as they approach the river for spawning. Spawning itself does not take place until late April to early June. Modern landings of smelt are greatest in October and November (Templeman 1966).

Atlantic Salmon

Atlantic salmon are present in many rivers and streams in Newfoundland, including Western Brook, located immediately south of the Broom Point headland. They are an anadromous fish, migrating from the open ocean into rivers to spawn (Smith 1983). They generally spawn in October or November; the actual date depends on the region and is characteristic for each river (Scott and Crossman 1973). These marine salmon are larger than the landlocked varieties, and weigh from 2.0 - 10.0 kg, occasionally exceeding 15.0 kg. Atlantic salmon normally survive the initial stress of at least one spawning (Smith 1983).

Brook Trout

The sea running form of the brook or mud trout usually descend to the sea in late April to early June. The run is strongest when the stream temperature approaches 10° C; a drop in temperature may retard or even reverse part of the run. The trout move out of the inner estuaries, and in May and June rove the shores in five to ten feet of water, in schools of five to twenty fish. They return to the river during July of the year they descended, having spent only two months at sea. As the season advances the trout move farther upstream, spawning in October to November, depending on water temperature and flow (Scott and Crossman 1964).

Arctic Char

Arctic char are similar in habits to the brook trout. The sea running char spend July and August at sea, moving only a few miles from their native rivers (Templeman 1966). A small sea run is known from Parsons Pond on the west coast of Newfoundland (Templeman 1966), although other runs probably exist in the study area as well. Char reach full growth at twelve years of age, weighing an average of 2.0 - 3.0 kg (Comm. Dir. 1984).

Riverine/Lacustrine Resources

No true fresh water fish occur in insular Newfoundland (South 1983:2); all are marine related. The following represents a summary of the more common fish found in fresh water streams, rivers and lakes on the Island of Newfoundland, in their order of relative abundance. Most occur in solitary numbers in the fresh water near the coast in the study area.

Common Name	Scientific Name
atlantic salmon	Salmo salar
brook trout	Salvelinus fontinalis
arctic char	S. alpinus
smelt	Osmerus mordax
eel	Anguilla rostrata
winter flounder	Pseudopleuronectes americanus
mummichog	Fundulus heteroclitus
tomcod	Microgandus tomcod
fourspine stickleback	Apeltes quadracus
threespine stickleback	Gasterosteus aculeatus
twospine stickleback	G. wheatlandi
ninespine stickleback	Pungitius pungitius
american sandlance	Ammodytes americanus
windowpane	Scophthalmus aquosus *
alewife	Alosa pseudoharengus *
american shad	A. sapisissima *
banded killifish	Fundulus diaphanus *

sea lamprey	*Petromyzon marinus* *
atlantic sturgeon	*Acipenser oxyrhynchus* *

*rare
(Scott and Crossman 1964)

Avian Resources

Newfoundland possesses a relatively rich bird fauna; more than half of the 518 taxa recorded for Canada have been recorded in Newfoundland (Mednis 1981:241). The coastal location of Broom Point and its proximity to a complex marsh/pond environment would have allowed the exploitation of a number of sea and shore birds, in addition to birds common to the boreal forest/barrens ecotone and marshland. The following represents a summary of the avifauna present in the study area that would have been the most likely candidates for prehistoric utilization.

Common Name	Scientific Name
willow ptarmigan	*Lagopus lagopus*
rock ptarmigan	*L. mutus*
loons	*Gavia* spp.
gulls	*Laridae* spp.
common eider	*Somateria mollissima*
black duck	*Anas rubripes*
oldsquaw	*Clangula hyemalis*
Canada goose	*Branta canadensis*
ringed-neck duck	*Aythya collaris*
green-winged teal	*Anas carolinensis*
red-breasted merganser	*Mergus serrator*
bald eagle	*Hatiaeetus leucocephalus*
pintail	*Anas acuta*
wood duck	*Aix sponsa*
common goldeneye	*Bucephala clangula*
harlequin duck	*Histrionicus histrionicus*
king eider	*Somateria spectabilis*
common merganser	*Mergus merganser*
common murre	*Uria aalge*
thick-billed murre	*U. lomvia*
common tern	*Sterna hirundo*
arctic tern	*S. paradisaea*

(Threlfall 1983)

The ptarmigans, loons, gulls, common eider and black duck represent permanent residents in the study area, that is, they are generally available year-round. Canada goose, ring-ed-neck duck, green-winged teal and red breasted merganser are migratory waterfowl, available in the spring, occasion-ally through the summer, and the fall; they have also been known to overwinter in small numbers. The oldsquaw is a winter resident, also available in the spring and fall, and sometimes present in the study area in the summer. The bald eagle is also a permanent resident of the area, congregating in large numbers along coastal areas in the winter. The pin-tail is available in the late fall and winter months only, and common goldeneye, harlequin duck, king eider, common mer-ganser and common and thick-billed murres are winter reside-nts. Common and arctic tern are present in the study area in the summer, and the wood duck is common in the late sum-mer and early fall (Threlfall 1983; L.M. Tuck 1967).

While probably not inedible, other varieties of birds in the study area represent less likely candidates for pre-historic exploitation due to the fact that they are uncommon, small in size or solitary in nature, rarely occurring in large numbers. Of the likely candidates for exploitation, geese and ducks in particular would have provided a valuable source of food, especially during periods of nesting and moulting, when the birds would aggregate and be more vuner-able to potential predators. Canada goose and eider duck have been identified in the faunal assemblage from the Factory

Cove site (Auger 1983).

Flora

A wide variety of edible plants and berries are also present in the study area including the following:

Common Name	Scientific Name
chuckley pear	*Amelanchier bartramiana*
wild strawberry	*Fragaris vesca, F. virginiana*
pin cherry	*Prunus pennsylvanica*
chokecherry	*P. virginiana*
bakeapple or cloudberry	*Rubus chamaemorus*
raspberry	*R. idaeus*
dewberry	*R. pubescens*
blackberry	*Rubus* spp.
crackerberry	*Cornus canadensis*
blueberry	*Vaccinium angustifolium*
marshberry	*V. macrocarpon*
partridge berry	*V. vitus-idaea*
crowberry	*Empetrum nigrum*

(Scott 1975)

Most of the berries are seasonal, ripening from midsummer on, or in early autumn. It is not clear what role plant foods played in prehistoric subsistence patterns, although berries would have at least added variety, if not essential nutrients, to the diet if exploited.

Raw Material

The best documented source of raw material in the study area consists of what are loosely termed the vari-coloured Cow Head cherts, which occur in the form of chert beds or clasts within the rocks of the Cow Head Group of the Humber Arm Allochthon. The Cow Head Group consists of a relatively thin sequence of limestone breccias, with interbedded lime mud-stones to grainstones, calcareous sandstones, siltstones and shales, outcropping on the west coast of the Northern Peninsula, from Humber Arm to just north of Cow Head (James and Stevens 1982:41).

In a sampling programme undertaken on the Cow Head peninsula in 1977, significant concentrations of chert and siliceous material were found only on the southern shore of the Head and inland in beach deposits; neither detrital nor outcropping chert was located on the northern shore. Of these concentrations, bedded chert was only found in the inter-tidal zone in and around Shoal Cove on the southern shore of the Head. Although additional undetected outcrops may exist in the area, Kennedy noted that "the chert fragments in the beachrock along the southern shore are the most likely source of raw material for the chert tools," with reference to the artifacts retrieved from the Cow Head site, "as the bedded chert sequences now exposed would have been in the subtidal zone and, therefore, inaccessible as a quarry site" (Kennedy 1977:2).

It has also been suggested that the sea level, falling as it is, may not have exposed the Cow Head deposits until as late as 2450 B.P., indicating that this potential source of raw material may not have been available to the earliest inhabitants of the region (Grant as quoted in Tuck 1972b:13). Chert sources in the Broom Point - Cow Head area will be further discussed in Chapter 4: Artifact Analysis.

Chapter 3

SITE DESCRIPTION AND EXCAVATION

Site Description

The Broom Point site (DlBl-1) is located on one of the small promontories that comprise the Broom Point headland, on the west coast of Newfoundland's Great Northern Peninsula (Figure 2) at 49°50'08" N and 57°52'03" W, within the boundaries of Gros Morne National Park. At present, the site is situated on a grassy terrace 4.3 metres above sea level, overlooking a series of limestone outcrops that extend into the Gulf of St. Lawrence and which remain accessible even at high tide (Figure 18). The terrace edge slopes abruptly to a small rocky beach below, and is currently undergoing surface erosion. The site is bounded by the terrace edge to the north, a dense stand of tuckamore to the east, and a modern dirt road running parallel to the water's edge to the west. The southern boundary of the site has been delimited by extensive test pitting and runs to the rear of the Historic Building (Figure 3).

Surface vegetation on the site consists of low grasses in the dry areas to the north and west, and a variety of marsh grasses and plants in the wet area to the east. The marsh is wet throughout the year, fluctuating in extent (*i.e.*, in its western limit), depending on the amount of precipitation that falls in a particular season. For example, in early July of 1984, when the surface map was drawn, the marsh was very wet and deep, extending into the area separating Areas 1 and 2, and Area 3. By the end of August this area was relatively dry (cf. Figure 3).

Elevations taken on various high and low points indicate an east-west slope to the site, ranging from 5.2 metres above sea level in the eastern marsh area, to 3.6 metres above sea level on the road (Figure 3). The marsh area provides a potential source of fresh water as does a small spring located to the east of the site. In recent historic times, Broom Point was noted for the "good" water which was obtainable from a well situated in the centre of the marsh.

The site has been repeatedly disturbed by late nineteenth and twentieth century occupations. Structural evidence pertaining to the construction of at least four buildings, two of which still stand, indicates serious disturbance of surface and subsurface deposits in certain areas. One of the remaining structures is a large red "fish store" located off the site map to the northwest of Figure 3. The second is a green and white cabin that was used as a field laboratory in 1984. In addition to the construction of the above buildings, the site has also been disturbed by the building and grading of a dirt access road which ends in a small gravel lot at its northern limit. There is some evidence to indicate that the road may have changed its position over the years and was once located closer to the historic building (Figure 3).

In more recent times, Broom Point was the site of a 1930's seasonal summer fishing station, whose activities included the operation of a small fish canning plant out of the structure once located in Area 2 of the 1982 excavations (Figure 3). Today, Broom Point is utilized seasonally by commercial fishermen for the hauling in and storage of lobster traps.

Previous Investigations at Broom Point

Prehistoric remains recovered from Broom Point were first mentioned in a brief survey report submitted by Tuck (1972a,b) to Parks Canada. The survey was undertaken in order to locate sites in the proposed Gros Morne National Park which might be destroyed by park development, and to provide a precise basis for interpretation of the prehistory of the Bonne Bay area (Tuck 1972b). Two small, previously unrecorded sites were discovered on Broom Point proper; the first small station was located between the gravel road and the edge of the bank of the small cove at Broom Point, and the second concentration was located on the north side of the peninsula between the cabin and the now dismantled shed (Area 2 of Figure 3), mostly on the eroding bank (Tuck 1972 a,b).

The first site was badly disturbed by house and flake construction, and by wholesale earth movement during the destruction of a decayed and partially burned building, with wood, charcoal and tar thoroughly mixed with the prehistoric artifacts in the soil. Test pitting did not reveal any undisturbed areas, and cultural material retrieved included one Middle Dorset chert endscraper and several dozen small chert flakes (Tuck 1972b:7). This site is probably an extension of the following.

The second site, or locus, consisted of a thin, partially disturbed cultural deposit containing a number of Middle Dorset artifacts, first noticed eroding from the ground beneath a small shed structure on the terrace (Area 2 of Figure 3). Tuck noted that "test pitting confirmed the shallow and unproductive nature of the deposit and the lack of cultural features" (Tuck 1972b:8). Artifacts recovered included one biface fragment, one triangular tip-fluted endblade, three prismatic blades, two chert endscrapers and approximately fifty chert flakes. The paucity of cultural material recovered indicated a brief Middle Dorset habitation, and no further work was recommended at either loci unless the site became threatened with destruction (Tuck 1972b).

Preliminary excavations at the second locus at Broom Point and test-pitting of the surrounding area were later undertaken during a two week period in 1982, under the field direction of Auger, then a graduate student at Memorial University (Tuck and Auger 1982). Since the Broom Point area had previously been designated for development of an interpretative centre around the theme "Harvesting the Sea," it was thought by Gros Morne Park personnel that the inclusion of material regarding the prehistoric use of Broom Point and its resources would be a valuable addition to the interpretative programme, and a contract was issued by Parks Canada providing funds for fieldwork and analysis of the material recovered during excavations (Tuck 1982b).

Prior to the start of intensive excavations, the surface of the potentially habitable area was test-pitted to determine the extent of cultural deposits, and an area of approximately 400 square metres was noted to be productive of prehistoric and recent European material (Tuck 1982b). Aside from extensive test-pitting of the site, the 1982 work concentrated on the already largely disturbed areas of the site where the prehistoric material appeared to be concentrated, in an attempt to retrieve as much diagnostic cultural material as possible within a limited time. Excavations concentrated in two areas, Areas 1 and 2 (Figure 3), using a grid of one metre squares, each referenced by distance and direction from a fixed datum located on the beach below the terrace. All formed tools were recorded horizontally to the nearest centimetre with reference to the grid (in the undisturbed areas), and vertically by the natural stratum in which they occurred. Flakes were recorded by one metre section and stratum (Tuck 1982b).

A total of 226 tools of Middle Dorset affiliation was recovered during the 1982 excavations, in addition to 2504 pieces of debitage and a radiocarbon date of 1650±90 B.P. (Beta-4471), compatible with other Middle Dorset sites in western Newfoundland. As well, the preliminary work resulted in the tentative establishment of an additional small Early Palaeo-Eskimo (Groswater phase) occupation at the site, dated at 2285±100 B.P. (Beta-4770). A single feature in Area 1 consisted of a concentration of charcoal mixed with burned soil and/or red ochre bounded by two large rocks, suggestive of a hearth. The eighteen square metres excavated here "show clearly that the historical occupation, and probably multiple Middle Dorset occupations, have destroyed all evidence of architectural features" (if they existed), although the stratigraphy was "relatively intact" (Tuck and Auger 1982:3).

In Area 2, after the removal of the floor boards of the shed structure, a total of approximately forty square metres was excavated, about half of which was disturbed by previous European construction and associated activities, and erosion. Features included an unidentifiable concentration of stones associated with Middle Dorset artifacts in the disturbed soil beneath the building and between the joists, and in the relatively undisturbed area, a roughly circular arrangement of small rocks measuring 4.0 by 3.8 metres, "which may confidently be interpreted as a Middle Dorset tent ring" (Tuck and Auger 1982:5). Two charcoal concentrations, suggesting small scattered hearths, were also identified in this area, and four flat rocks just inside the rock circle "suggest(ed) some type of storage box, a type of feature not uncommon at other Middle Dorset sites" (Tuck 1982b:7). Unfortunately, the fieldnotes, original maps and photographs from the 1982 excavations are missing. The significance of the above features, in particular the "probable tent ring," and the "storage box," will be further discussed in Chapter 5: Site Interpretation.

1984 Investigations at Broom Point

In April of 1984, a contract was issued by Parks Canada providing funds for additional fieldwork at Broom Point, partly in reaction to unanswered questions resulting from the preliminary investigation of the site (*i.e.*, the extent and nature of the Middle Dorset and Groswater occupations), and partly as good cultural resource management; increased visitor access, erosional damage and potential future development of the area endangered the site and necessitated the immediate continuation of archaeological investigations at Broom Point. The research was carried out by a crew of three graduate and undergraduate students from Memorial and Trent Universities, under the field direction of the author. The field season covered an eight week period between 2 July and 25 August 1984.

The research aims of the 1984 season were three-fold: 1) to obtain additional information regarding the nature and extent of the Palaeo-Eskimo occupations of the Broom Point site through the controlled, systematic excavation of the *undisturbed* areas of the site; 2) to test intensively the marsh in hopes of recovering evidence of faunal or other organic remains associated with the prehistoric components; and 3) to conduct a complete survey of the Broom Point headland below the 25-foot contour, in an attempt to locate additional prehistoric and historic sites. In addition to these three main goals, areas of the site threatened by development or by increased visitor access were to be completely excavated (Krol and Tuck 1984, 1985)

Excavations

Methodology

The techniques of excavation and recording utilized in the 1984 season followed those outlined in the Parks Canada Archaeology Manual, Volume 1: Excavation Records System, 1978. The 1982 datum was re-located, and the grid re-established (still using magnetic north) and extended to include the marsh area. As the whole of Gros Morne National Park had been assigned a single site number (8A), Broom Point was divided into a series of eight by eight metre "Operations," based on the previously established grid. Each was designated by its southwest corner datum. "Sub-operations" referred to two by two metre units within the eight m^2 Operations; thus there existed sixteen Sub-operations per Operation. Although the definitions were arbitrary, the designation of Operations and Sub-operations in this manner proved to be both flexible and manageable. Operations could not be assigned to culturally significant areas within the site due to the nature of the prehistoric components; prior to actual excavation, no indication of the existence of either structures or features was recovered through either surface examination of the site or limited subsurface testing.

Lot numbers were assigned to all formed tools and retouched flakes, which were recorded horizontally and vertically with reference to the datum, as well as features (such as hearths, soil stains and caches), and scientific samples (charcoal, hearth fill and soil samples). Debitage received lot numbers according to one metre quadrant and level within the individual Sub-operations, in keeping with the field methods employed in the 1982 excavations; the large amount of debitage did not permit the exact horizontal and vertical plotting of each specific piece. Excavation proceeded by natural stratigraphic levels, with the trowelling of cultural levels and shovel-shaving of the sod and sterile peat levels. Backdirt from prehistoric cultural levels was screened using one-quarter inch mesh (and one-eighth inch mesh where possible), in order to retrieve cultural material which might otherwise have gone unobserved, with tripods being set up over and to the immediate east of Area 2 on the terrace.

Features such as hearths and caches were mapped in relation to the grid, photographed, and eventually removed to allow excavation to continue. Soil profiles were recorded for all units, and soil samples from cultural levels, features and hearths were taken for flotation (unfortunately with negative results). Where located, carbon samples were retrieved for carbon-14 analysis. A sample of peat was also taken in an attempt to date the peat blanket. Elevations were recorded in metres above sea level (at the daily high water mark) for the southwest corner datum of each Sub-operation excavated, as well as for high and low points along the terrace edge, the grassy clearing, the marsh area and the road. The site was back-filled following excavations (Krol and Tuck 1985).

Results of Excavations

Radiocarbon dates from Broom Point, including those derived from the 1982 excavations, have been summarized below for comparison purposes and easy reference.

Lab #	Location	Material	Date	Cultural Affiliation
		1984 Series		
Beta-11374	Op. 17	charcoal	1970±150 B.P.	disturbed
Beta-11375	Op. 19	charcoal	1420± 70 B.P.	Middle Dorset
Beta-11376	Op. 19	charcoal	1370±100 B.P.	Middle Dorset
Beta-11249	Op. 37	peat	720± 60 B.P.	no cultural assoc.
		1982 Series		
Beta-4770	Area 1	charcoal	2285±100 B.P.	Groswater
Beta-4471	Area 2	charcoal	1650± 90 B.P.	Middle Dorset

(Tuck 1982b; Krol and Tuck 1985)

There is nothing on the surface of the site, such as depressions or differences in vegetation, to indicate the presence of structures or features at Broom Point. Although testing was employed along the terrace edge in 1982, additional testing was undertaken in 1984 between the terrace edge and the field laboratory, in order to locate previously undiscovered concentrations of prehistoric material. An attempt was also made to restrict the 1984 excavations to those areas of the site considered to be undisturbed, so that the prehistoric material retrieved would be in its original context. A total of 280 tools of Middle Dorset affiliation was recovered, in addition to 7414 pieces of lithic debitage.

Stratigraphy across the site varies (Figure 4). In total, eight natural and cultural levels can be recognized, although not all of the levels occur in all areas of the site, and the overall depths of the soil profiles range from approximately 72 cm deep on the eastern terrace edge of the site (Figure 4, 8A37R), to 26 cm deep in the grassy clearing north of the lab (Figure 4, 8A19J), to a mere 15 cm deep in the units beside the road (Figure 4, 8A14A), following the east--west slope of the site mentioned earlier. A brief description of the stratigraphic levels found at the site is as follows:

<u>Level 1</u> is a grass/sod layer containing broken glass and other recent material and garbage. This layer ranges from a very thin grass level less than one cm thick, to a well-developed, rooty sod 3-5 cm thick.

<u>Level 2</u> is a loose, medium brown, root-filled soil containing

historic material dating from the late nineteenth century, but mostly from the mid-twentieth century. It ranges from 5-10 cm in thickness. Level 2 does not appear in the eastern portion of the site, in either the marsh or on the extreme terrace edge (Figure 4, 8A37R), being restricted to areas associated with European activities.

Level 2A is a loose peat layer, reddish-brown in colour, containing identifiable pieces of wood and bark. The peat layer is extensive, covering a large part of the site, although it varies considerably in thickness, and is occasionally mixed with level 2. Its variability in thickness and extent is, no doubt, associated with fluctuations in the extent of the marsh. At the eastern terrace edge it measures up to 40 cm in thickness (Figure 4, 8A37R), while it is non-existent in the units alongside the road (Figure 4, 8A14A). In the grassy clearing to the north of the lab, the peat ranges from 2-10 cm in thickness (Figure 4, 8A19J). Very thin, dark bands are occasionally detectable in the peat in this area, associated with a few pieces of non-diagnostic debitage. They are generally hard to follow, and disappear within the same unit. The peat blanket has been dated at 720±60 B.P. (Beta-11249), from a sample taken along the terrace edge.

Level 3 is a thin black humus ranging from 1-5 cm in thickness. It contains cultural material relating to the Palaeo-Eskimo occupations at Broom Point, although no separation can be detected in the humus relating to separate occupations, *i.e.*, Groswater versus Middle Dorset material. This level is occasionally so thin that, while it is observable during excavation, the humus is difficult to distinguish in the soil profiles. For example, in the excavation of Operation 37, a very thin level 3 was detected overlying level 3A (a shale lens). In the soil profile for the north wall of the unit, however, the level is barely distinguishable (Figure 4, 8A37R).

Level 3A is a light brown shale lens. In Operation 37 on the terrace edge, the shale only appears in the north half of the unit, measuring 25 cm in thickness on the north wall. A brown shale also appears in units beside the road (Figure 4, 8A14A), although the shale in this area is thought to be cultural and associated with recent European activities; here the shale is fractured and jumbled, and the area is generally disturbed. Shale does not appear elsewhere in the site.

Level 3B is a thin black clay-like layer associated with and underlying the shale lens in the north half of Operation 37 only, possibly resulting from contact between level 3A and level 5. This black layer is not believed to be cultural.

Level 4 is a grey sand layer, probably resulting from contact between levels 3 and 5, and measuring 1-3 cm in thickness. It is a good marker in soil profiles and in units where level 3 is hard to distinguish, although levels 3 and 4 are occasionally mixed. Level 4 contains cultural material intrusive down from level 3. It does not appear in units by the road (Figure 4, 8A14A), or on the eastern terrace edge (Figure 4, 8A37R). This level presents difficult digging as it covers and occurs between the great profusion of naturally occurring beach cobbles from level 5.

Level 5 represents an ancient beach surface, and consists of light brown sand mixed with a jumble of naturally occurring beach cobbles. It is devoid of cultural material, and represents the original occupation surface for the prehistoric inhabitants of Broom Point.

Although the terrace was intensively investigated in 1982, additional work was carried out during the 1984 excavations. The potential for increased erosion, brought about by both natural and human factors, is great in this area; wind action, dirt bikes and sheep appear to be the chief agents. An area of sixteen square metres (Operation 37), located to the east of the 1982 excavations, was explored (Figure 3). No features were detected, and only a scatter of non-diagnostic debitage and a single Early Palaeo-Eskimo biface were recovered. Although not significant in terms of the amount of cultural material it produced, this area provided an excellent undisturbed soil profile of the site, in addition to the peat date of 720±60 B.P. (Beta-11249).

Because of its proximity to the modern road leading to the point, the area immediately adjacent to the road was tested in order to assess the significance of the cultural material and to determine whether the area warranted further investigation. Five one metre square units were excavated in this area (Figure 3, Operations 4, 14, 17 and 18). Two features were located in Operation 17, which is located immediately south of one of the 1982 areas of excavation (Area 1). Both features represent small, roughly circular, red stains in the soil. No formal hearth structures were found in association, although a few pieces of fire-broken rock were retrieved. Enough charcoal was collected to produce a date of 1970±150 B.P. (Beta-11374). Although the date is somewhat more recent than Groswater dates from elsewhere in Newfoundland, it may support the previous Groswater date Of 2285±100 B.P. (Beta-4770) obtained from this general area during the 1982 excavations. It is likely, however, that the date is the result of contamination through disturbance in this area of the site.

A number of artifacts of Groswater affiliation were also found in association with the above features. In general, however, cultural material consisted of a small scatter of artifacts and debitage; no structures were located. Level 3 was very faint with a mottled, blotchy appearance in some places, and with occasional mixing of prehistoric and historic artifacts, coal and sandstone pieces. Unfortunately, the building of the present road has destroyed the extreme western portion of the site, and it is likely that the location of a previous road immediately adjacent to the modern one was also responsible for the disturbance noted in this area.

Partly as a process of elimination, the 1984 excavations concentrated on a grassy clearing located between the terrace edge and the 1984 lab (Figure 3, Operations 19, 20, 29 and 30; Figure 20). Fortunately, this area was relatively undisturbed by recent settlement or natural agencies, except in the extreme west (Operation 19A, 19J). Although during testing in 1982 it was noted that the "test pits indicated that the cultural material did not extend more than five metres to the rear of the small shed (Area 2)," (Tuck and Auger 1982:4), this was found not to be the case. Horizontal areal excavation of forty square metres, following concentrations of artifacts, succeeded in locating an activity area in Operation 19. In Figure 5, a discrete cluster of artifacts can be observed in the eastern portion of the Operation, although there is no concentration of any one particular tool type. All tool types have been identified as Middle Dorset, and a large amount of debitage was also collected from this area.

In addition, one intact hearth feature was located, consisting of a roughly circular ring of small to medium sized hearth rocks (whole fire-cracked rock as well as fragments), approximately 60 cm in diameter and surrounding a dark stained area of soil (Figures 5 and 21). Unfortunately, charcoal was too sparse for collection, and flotation of the hearth fill did not succeed in the retrieval of enough charcoal for a reliable sample, or in the recovery of any floral or faunal material. The remaining "hearth" features in the excavation consisted of grey ash stains and/or scatters of charcoal and burnt fat in association with loosely scattered fragments of fire-broken rock (Figure 5). One charcoal sample was dated at 1420±70 B.P. (Beta-11375), and a second at 1370±100 B.P. (Beta-11376). Both dates are compatible with a Middle Dorset occupation of Broom Point.

Another type of feature located in Operation 19 relates to tool manufacture. A lithic cache was uncovered, consisting of a circular arrangement of beach cobbles surrounding a dense concentration of lithic debris (Figure 5). It measured approximately 50 cm in diameter, and contained 1764 pieces of debitage including 41 primary decortication flakes, 48 secondary decortication flakes, 15 cores/core fragments, 86 secondary flake blanks (many suitable for use as tool blanks), 162 block shatter, 1310 retouch/resharpening flakes and 94 non-identifiable flake fragments of opaque Cow Head chert (lithic type 1), and 7 retouch/resharpening flakes and one non-identifiable flake fragment made from translucent Cow Head chert (lithic type 2), all within 10 cm of depth. Another such lithic cache was located in the test unit in Operation 29. This feature was smaller than the cache in Operation 19, measuring 25 cm in diameter, and contained 288 pieces of debitage including 10 primary decortication flakes, 9 secondary decortication flakes, 56 secondary flake blanks, 78 block shatter, 67 retouch/resharpening flakes and 64 non-identifiable flake fragments of opaque Cow Head chert (lithic type 1), one secondary decortication flake and one block shatter of translucent Cow Head chert (lithic type 2), one secondary flake blank of mottled grey chert (lithic type 8), and one non-identifiable flake fragment of quartzite (lithic type 11), all within a depth of 14 cm. It is possible that these caches may have once represented hearth features as well, although no associated charcoal, staining or fire-broken rock were detected.

No evidence of house structures was uncovered in Operation 19, or in any of the test units in this area, and the jumble of small, naturally occurring beach cobbles in levels 4 and 5 did not form any patterns reminiscent of tent rings or other significant formations. In addition, a programme of systematic testing over the remainder of the site (Figure 3), indicated only a thin scatter of debitage and a few formed tools, with no evidence of any further concentrations of prehistoric material.

Testing of the Marsh

The marsh area of the site (Figure 3) was systematically tested every eight metres in hopes of recovering preserved faunal remains or other organic materials discarded by the prehistoric inhabitants of Broom Point. A series of 50 by 50 cm test pits was excavated at the southwest corner of each Operation. Fifteen such pits in total were excavated in the marsh and examined for evidence of cultural material, and the resulting soil profiles were recorded, extremely quickly, as the test holes had a tendency to fill with water in less than a minute. Little cultural material was located in the marsh area, save for two flakes recovered from the southwest corner in Operation 7, and a scatter of recent garbage. Soil profiles were virtually identical to those already described for the terrace edge, with the peat blanket varying in thickness (up to a metre in places), and with the absence of a shale lens. A thin black level 3 was visible, as was the grey sand (level 4) above the ancient beach. The grasses of the sod level were replaced with marsh plants and moss (Krol and Tuck 1985).

Survey Component

A complete survey of the point was also undertaken, concentrating on those areas below the 25-foot contour, in an attempt to locate additional prehistoric and historic occupations in the area. This entailed traversing on foot the coastline of Broom Point, from the mouth of the Western Brook River to the wharf at St. Pauls Bay. Exposures were checked for evidence of cultural remains, and subsurface testing was employed in a judgemental fashion, wherever the ground cover would permit, as well as in prime site locations. One previously unlocated site was discovered, and two previously recorded sites were re-located. These sites will be further discussed and described in Chapter 6: Site Significance and Speculations.

Chapter 4

ARTIFACT ANALYSIS

Methodology

A total of 10,436 prehistoric artifacts was recovered from excavations at Broom Point, including 518 lithic tools and tool fragments and 9918 pieces of debitage. The majority of these artifacts (98.5 % of the tools) relate to the Middle Dorset phase of the Late Palaeo-Eskimo tradition. The remaining 1.5 % of the tools have been identified as belonging to an earlier Palaeo-Eskimo component from the site.

A detailed analysis has been performed on all recovered artifactual material from the Middle Dorset component of the Broom Point site. This includes material collected during previous investigations in 1982, as well as additional cultural material retrieved as a result of the 1984 excavations. As no organic artifacts were recovered from the excavations, the following artifact descriptions pertain only to lithic materials.

The typology and the analysis employed is explicitly non-statistical, due to the small sample size of the tools recovered. Traditional Palaeo-Eskimo typology has been used in order to facilitate comparisons with artifact collections from other Middle Dorset sites in western Newfoundland. Tools have been grouped into artifact classes that share morphological characteristics and technological traits (Crabtree 1972:97). A certain amount of presumed shared function among tools in an artifact class is implied in this typology, based on the assumption that "these classes probably had a certain validity among the people who made and used them, and therefore impart some sense of the activities performed" (Tuck 1982b:10). Tools relating to the Early Palaeo-Eskimo component at the site have been accorded the same treatment, but will be only briefly described in the following section.

Tool Descriptions

Middle Dorset Component (Tables 2-4; Figures 22-30)

Endblades Total=16; Figure 22, a-n

A total of 16 harpoon endblades and endblade fragments, 8 from previous exploratory investigations at Broom Point and 8 from the 1984 excavations, was recovered from the site. Examples from this artifact class can be separated into three sub-categories to facilitate description. These include triangular chipped stone endblades, notched chipped stone endblades and chipped stone endblade fragments.

Triangular Chipped Stone Endblades Total=12; Figure 22, a-i and k-m

Dimensions for the Complete Examples

length (n=12)	range 18.0 - 56.0 mm	mean 30.2 mm
width (n=11)	range 10.0 - 17.0 mm	mean 14.6 mm
thickness (n=12)	range 3.0 - 5.0 mm	mean 3.8 mm

A total of 12 triangular chipped stone endblades can be identified in the site assemblage. Of these examples, 9 are fully functional, 3 of which represent small reworked specimens (Figure 22, k-m) and 3 are relatively complete, missing portions of the base or lateral edge - base junction only. Three of the endblades are made from opaque Cow Head chert (lithic type 1), 8 are made from translucent Cow Head chert (lithic type 2) and a single example is made from semi-translucent blue-grey chert (lithic type 6).

All of the examples are triangular in shape with excurvate lateral edges, and posses bases that range from slightly concave (n=3) to markedly concave (n=9). In addition, all 12 of the endblades exhibit some degree of bifacial retouch; complete random or complete collateral flaking on the dorsal surface, and marginal retouch on the ventral surface (the latter being confined to the lateral edges and the proximal end of the specimens). Nine examples are tip-fluted, a sharpening process whereby a pair of small flakes are removed from the distal end of the ventral surface of the artifact. Only the 3 reworked endblades do not possess this attribute. Five of the endblades are basally thinned, and 2 of these possess a single basal flute on the ventral surface. Both of these are modifications that would facilitate hafting. None are ground.

As a group, these triangular endblades are typical of Middle Dorset Eskimo culture in western Newfoundland (Harp 1964: Plate I; Linnamae 1975: Figure 15, a-f). In sites with good organic preservation, such as is found at Phillip's

Garden, harpoon heads made from organic materials have been recovered associated with these triangular points (Harp 1964: Plate XXIV).

<u>Notched Chipped Stone Endblade</u> Total=1; Figure 22, j

A single notched endblade of Middle Dorset affiliation was recovered from the site. It is triangular in overall shape, possessing slightly excurvate lateral edges and a concave base. The specimen is made on a secondary flake and possesses 3 shallow notches on the lateral edges close to the base; a single notch on the left lateral edge, and 2 on the right lateral edge. There is no evidence of grinding. The endblade is made from translucent Cow Head chert (lithic type 2), is 30.0 mm in length, 12.9 mm in width, and 3.5 mm in thickness. Retouch is random bifacial, and there is no evidence of tip-fluting.

This notched example may have provided the same service as the triangular specimens, <u>i.e</u>., it may have served as a harpoon endblade. The triangular outline of the specimen, and its material type (lithic type 2) are similar to the un-notched examples discussed previously. This would tend to support the interpretation that the notched endblade represents a variation of the triangular endblades from the Middle Dorset component at Broom Point, although it is possible that the projectile point may have been attached in a fixed position to a shaft and utilized in the hunting of small terrestrial mammals, fish or birds.

Chipped Stone Endblade Fragments Total=3

Three chipped stone endblade fragments were recovered during investigations at Broom Point, one made from opaque Cow Head chert (lithic type 1), one made from translucent Cow Head chert (lithic type 2) and one made from grainy grey chert (lithic type 3). Only one fragment is complete enough to allow estimation of its original form; a concave basal portion of a triangular endblade. An endblade base - lateral edge fragment and a tip fragment are also represented. All exhibit fine bifacial retouch.

Ground Stone Lance Total=1; Figure 22, n

A single ground stone lance was recovered from Broom Point. It is a complete specimen made from a light grey silicified slate (lithic type 19). It is considerablely larger than the chipped stone endblades already described, measuring 84.0 mm in length, 22.2 mm in width, and 4.9 mm in thickness. The lance is triangular in overall shape with excurvate lateral edges. It possesses a blunt tip, a straight base, and a pair of shallow side-notches that have been ground into the lateral edges near the base. Both surfaces of the blade are ground flat and the lateral edges are double-bevelled, producing a flattened hexagonal cross-section. Two narrow vertical slits, approximately 16.0 mm in length, appear on the lance body near the base and were incised from both the ventral and the dorsal surfaces. A large flat thinning facet also appears on the proximal half of the ventral surface. The artifact has suffered minor damage from weathering, resulting in the exfoliation of much of the dorsal surface, as well as a small degree of fracturing on the tip.

Examples of ground slate lances have been found associated with Middle Dorset material from other sites in western Newfoundland (Phillip's Garden and Cape Ray as examples), although complete specimens are rare (Harp 1964: Plate XVII; Linnamae 1975: Figure 16, e-k). These large projectile points are usually interpreted as representing lance blades or spear heads that would have been hafted in a fixed position to a foreshaft, which in turn would have been attached to a long thrusting shaft (Tuck 1982b:14). The function of such a weapon may have been to dispatch wounded marine mammals, such as seal, walrus or small whales, which had been harpooned and brought near the edge of a boat or the <u>sina</u>. The ground slate lance head would likely pierce the hide and blubber layer of the animal with greater ease than one of the smaller chert endblades. This is conjecture, however, as such weapons could just as plausibly have been utilized in the hunting of terrestrial mammals.

<u>Endblade Preforms</u> Total=13; Figure 23

A total of 13 endblade preforms was recovered from excavations at Broom Point, 11 from earlier investigations at the site and 2 from the 1984 excavations. It was decided that the endblade preforms would be assigned to a separate artifact class, rather than included in the endblade count. This distinction is based on differences in function between the two artifact classes, and in turn, differences in the activities that the artifacts reflect. Fully functional endblades indicate that the hunting of marine mammals was taking place at the site, while the presence of endblade preforms denotes additional information: that endblade manufacture was also being carried out at the site. Combining the two categories would give the potentially misleading impression that all of the endblades from Broom Point were complete, fully functional specimens.

> Preforming denotes the first shaping. (A) preform is an unfinished, unused form of the proposed artifact. It is larger than, and without the refinement of, the completed tool (Crabtree 1972:85).

Dimensions for the Non-fragmentary Endblade Preforms

length	(n=8)	range	30.2 - 38.0 mm	mean 33.8 mm
width	(n=9)	range	15.0 - 20.0 mm	mean 18.1 mm
thickness	(n=13)	range	4.0 - 8.0 mm	mean 5.8 mm

In comparison with the dimensions for the endblades, the endblade preforms are noticeably larger and thicker than their finished counterparts. They range from the initial stages of manufacture to nearly complete specimens. Of the 13 endblade preforms recovered, 10 are made from opaque Cow Head chert (lithic type 1), 2 are made from translucent Cow Head chert (lithic type 2) and a single example is made from grainy grey chert (lithic type 3). They are roughly triangular in form and possess concave bases where observable. Some of the preforms have snapped basal - lateral edge junctions and were probably discarded because of this.

Tip-fluting appears on 5 of the specimens and a sixth example exhibits a tip flute scar on the left lateral edge of the ventral surface; the right portion of the tip retains its striking platform, awaiting the removal of the second tip flute flake. All of the preforms exhibit some degree of bifacial retouch, from marginal to complete random to complete collateral on the dorsal surface, and from marginal to complete random on the ventral surface. Four of the preforms are basally thinned, and a single example possesses a basal flute. Five of the preforms display attempts at notching, although the notches are generally weak and not well-defined (Figure 23, i-l). One example has a single shallow notch on the left lateral edge near the base (Figure 23, i), another possesses a shallow notch on the right lateral edge near the base, 2 preforms exhibit a pair of shallow side-notches near the base (Figure 23, j and k), and a single example possesses a pair of weak, shallow side-notches near the tip (Figure 23, l). As the ratio of notched endblades to un-notched endblades is only 1:12, the 5:13 ratio of notched endblade preforms to un-notched endblade preforms appears rather high. It is possible that the notched preforms represent unsuccessful or practise attempts at notching; for the most part, the raw material used in the preforms is of a highly fractured, poor quality chert, which was probably difficult to work.

Bifaces Total=16; Figure 24, a-c and i-k

A total of 16 bifaces and biface fragments was recovered from Broom Point, 4 from previous investigations and the remaining 12 from recent excavations at the site. The term "biface" is used to denote an artifact that has been flaked on both surfaces (Crabtree 1972:38). The function of bifaces is usually interpreted as that of butchering/cutting instruments or "knives." The latter term has not been utilized here as its modern functional connotations are too specific, and the artifacts may have served a variety of purposes. This artifact class can be broken down into two sub-categories: bifaces with hafting modifications, and bifaces without hafting modifications.

Bifaces with Hafting Modifications Total=5; Figure 24, a-c

The bifaces in this sub-category have been modified for hafting purposes. The two complete examples are of a slightly asymmetrical, trianguloid shape. One example is made from opaque Cow Head chert (lithic type 1) and measures 65.4 mm in length, 27.1 mm in width, and 5.8 mm in thickness (Figure 24, b). The second example is made from Ramah chert (lithic type 14) and measures 65.1 mm in length, 42.2 mm in width, and 6.2 mm in thickness (Figure 24, a). Both display well-defined side-notches near the base. The Ramah chert example possesses an additional ground notch on the left portion of the base itself. Lateral edges of both specimens are slightly sinuous, the right one being more or less straight and the left one slightly excurvate. Bases of both bifaces are straight, tips are blunt and bifacial retouch is complete and random. Examples of similar bifaces have been recovered from the Phillip's Garden site (Harp 1964: Plate VI, 2).

In addition, two biface tip fragments were recovered from Broom Point, one made from opaque Cow Head chert (lithic type 1; Figure 24, c) and one made from translucent Cow Head chert (lithic type 2). These exhibit the same bifacial retouch as the complete examples. The remaining fragment is a side-notched biface midsection made from translucent Cow Head chert (lithic type 2).

Bifaces without Hafting Modifications Total=11; Figure 24, i-k

All of the artifacts in this sub-category are core tools made from opaque black Cow Head chert (lithic type 1). All exhibit extremely sinuous, irregular lateral edges that were formed by the removal of large flakes from both surfaces of the artifact. The complete example is ovate in overall shape and measures 59.2 mm in length, 40.3 mm in width, and 5.2 mm in thickness. It is estimated that the rest of the fragments were ovate in their original forms as well. These bifaces probably represent expediency tools.

Biface Preforms   Total=11; Figure 24, d-h

A total of 11 bifacially worked preforms and fragments was recovered from the site, 6 from previous investigations and 5 from the 1984 excavations. The definition of a preform has been previously given. In the case of this artifact class, the proposed tool form is indeterminate. All that can be deduced is that the end product would have been bifacially modified, probably either an endblade or a biface. They are made on a variety of materials including 3 made from translucent Cow Head chert (lithic type 2), 4 made from opaque Cow Head chert (lithic type 1), one made from opaque red chert (lithic type 7), one made from opaque mottled grey chert (lithic type 8), one made from slate-like chert (lithic type 9) and a single example made from opaque green chert (lithic type 11).

This group of artifacts can be separated into basal - medial fragments, tip - medial fragments and bifacially modified preforms made on flakes. The first group consists of 4 basal - medial sections; on 2 of the artifacts, retouch is complete on the dorsal surface and confined to one lateral edge on the ventral surface. The other 2 specimens exhibit complete dorsal retouch as well as marginal retouch on both lateral edges of the ventral surface. The second sub-class contains only one example: a tip fragment with random dorsal retouch and marginal ventral retouch. The last group contains 6 examples made on secondary flakes and flake fragments, the majority of which possess concave ventral surfaces. All display marginal retouch along the lateral edges of the dorsal surface, with marginal retouch occurring on one of the lateral edges of the ventral surface. A single example possesses a pair of shallow notches near the distal end of the flake.

Endscrapers Total=47; Figure 25

Forty-seven endscrapers and endscraper fragments were identified in the site assemblage, 23 from earlier investigations at Broom Point and 24 from the 1984 excavations. Generally speaking, the term "endscraper" is used here to denote a "...bevelled implement made on (a) flake or blade with (the) working edge on one or both convex ends. The bevel (or bit) is formed by unifacial flaking or by use" (Crabtree 1972:60). Such artifacts are usually interpreted as representing processing tools, used in the cleaning of skins and/or the working of organic materials such as wood, ivory and bone. This artifact class can be divided into 4 sub-categories to facilitate description: dorsally modified endscrapers, marginally retouched endscrapers, end of blade scrapers and endscraper fragments.

Dorsally Modified Endscrapers Total=19; Figure 25, a-m

Dimensions for the Complete Examples

length	(n=15)	range	13.3 - 29.6 mm	mean	21.1 mm
width	(n=15)	range	13.2 - 27.8 mm	mean	17.9 mm
thickness	(n=15)	range	3.3 - 8.2 mm	mean	5.1 mm

A total of 19 dorsally modified endscrapers and endscraper fragments was recovered from Broom Point. Eight are made from opaque Cow Head chert (lithic type 1), 8 are made from translucent Cow Head chert (lithic type 2), one is made from opaque light grey chert (lithic type 5), one is made from blue-grey chert (lithic type 6) and one is made from red-green mottled chert (lithic type 12). All of the endscrapers in this artifact class are characterized by partial to nearly complete retouch on the dorsal surface in addition to modification on the working edge. They are all made on thick secondary flakes with concave ventral surfaces. Most are triangular in overall shape (n=14), although one specimen is rectangular in shape with nearly parallel lateral edges. The shape of the more fragmentary specimens (n=4) is difficult to determine, although the lateral edges of one fragment flare slightly towards the bit. Bit angles are medium to steep.

In addition to retouch on the dorsal surface, 3 examples also exhibit minimal retouch on the ventral surface; 2 with marginal retouch along the left lateral edge of the ventral surface, and one with retouch on the entire left half of the ventral surface. Two of the endscrapers possess side-notches near midsection (Figure 25, b and m). It is likely that these modifications would have facilitated hafting.

Marginally Retouched Endscrapers Total=19; Figure 25, n-r and v

Dimensions for the Complete Examples

length	(n=15)	range 14.0 - 33.0 mm	mean 21.0 mm
width	(n=15)	range 10.8 - 22.2 mm	mean 16.5 mm
thickness	(n=15)	range 3.0 - 9.8 mm	mean 5.3 mm

This sub-category consists of 19 endscrapers that have been marginally retouched along the lateral edges of the dorsal surface or along the distal end only. Eight are made from opaque Cow Head chert (lithic type 1), 6 are made from translucent Cow Head chert (lithic type 2), one is made from blue-grey chert (lithic type 6), 2 are made from slate-like chert (lithic type 9), one is made from dense black chert (lithic type 13) and one is made from clear quartz crystal (lithic type 15; Figure 25, v).

The artifacts are roughly triangular in shape and are made on secondary flakes. Bit angles are medium to low. Only one endscraper displays any signs of hafting modification, consisting of a pair of shallow side-notches at mid-section (Figure 25, r). It is possible that some of these specimens may represent either unfinished dorsally modified endscrapers or perhaps expediency tools.

Blade Endscrapers Total=4; Figure 25, s-u

Four end-of-blade scraper fragments, all of translucent Cow Head chert (lithic type 2), were identified in the site assemblage. Only the bit - lateral edge portions of the tools are present, and retouch is confined to the distal ends. Cross-sections are triangular and the bit angles are low.

Endscraper Fragments Total=5

A total of 5 endscraper fragments (all edge - bit sections) was recovered from Broom Point, one made from opaque Cow Head chert (lithic type 1), 3 made from translucent Cow Head chert (lithic type 2) and one made from blue-grey chert (lithic type 6). It is not possible to determine the original forms of the artifacts.

Concave Sidescrapers Total=4; Figure 26, a-d

A total of 4 concave sidescrapers was recovered from the site, 2 complete specimens and 2 fragmentary examples. A single example is made from opaque Cow Head chert (lithic type 1), 2 are made from translucent Cow Head chert (lithic type 2) and a single example is made from blue-grey chert (lithic type 6). One of the complete examples is made on a blade (Figure 26, a). Retouch is found along the left lateral edge of the dorsal surface, producing a concave working area. This sidescraper measures 45.1 mm in length, 13.3 mm in width, and 5.5 mm in thickness. The 2 fragmentary specimens are identical to the above, both representing the distal portions of the blade tools. The second complete example is made on a thick elongate flake and also displays a concave working area along the left lateral edge, as well as bifacial retouch near the distal end, probably to facilitate hafting. It measures 31.2 mm in length, 12.5 mm in width, and 3.9 mm in thickness.

Unidentifiable Tool Fragments   Total=4

Four unidentifiable tool fragments were recovered from Broom Point, all from the 1984 excavations. One of the fragments is made from opaque Cow Head chert (lithic type 1), two are made from translucent Cow Head chert (lithic type 2) and a single example is made from blue-grey chert (lithic type 6). One fragment appears to represent an edge - base section which has been bifacially worked. The remaining fragments also exhibit bifacial retouch but defy further description.

Microblades   Total=140; Figure 27

The 140 microblades recovered from Broom Point constitute the most numerous class of artifacts in the assemblage (27.67 % of the total number of tools identified), although the majority of these represent fragments. Sixty-seven of these artifacts were recovered during previous investigations at the site and the remaining 73 are from the 1984 excavations. This artifact class can be divided into two sub-categories that facilitate description. These include chert microblades and associated blade-like flakes, and quartz crystal microblades. Both the chert and the quartz microblades are usually interpreted as representing multipurpose cutting tools.

<u>Chert Microblades</u> Total=118; Figure 27, a-r

<u>Dimensions for the Complete Examples</u>

length	(n=6)	range 34.5 - 54.2 mm	mean 44.9 mm
width	(n=6)	range 10.4 - 12.4 mm	mean 11.4 mm
thickness	(n=6)	range 2.6 - 4.0 mm	mean 3.0 mm

As can be determined from the above tabulations, only 6 complete blades (<u>i.e.</u>, those possessing intact proximal and distal ends) can be identified in the assemblage (Figure 27, a-c). Three of these examples are made from opaque Cow Head chert (lithic type 1), a single example is made from opaque green chert (lithic type 4) and the remaining 2 are made from translucent Cow Head chert (lithic type 2). Four of the artifacts display double arrises or ridges, while the remaining 2 possess a single arris each. There are no signs of further modification.

The remaining 112 artifacts in this sub-category represent microblade fragments: 13 proximal - medial fragments (6 with a double arris and 7 with a single arris), 30 proximal fragments (16 with a double arris and 14 with a single arris), 7 distal fragments (4 with a double arris and 3 with a single arris), 31 medial sections (20 with a double arris and 11 with a single arris) and 24 blade-like flakes (all with a single arris). The remaining 7 fragments are medial sections that exhibit signs of further modification, ranging from minimal retouch along one or both of the lateral edges, to shallow notching along a portion of one lateral edge (Figure 27, p-r). Although dimensions were not recorded for the fragmentary specimens, widths appear to be smaller than those recorded for complete examples.

Lithic material varies and includes a wide range of types including 29 artifacts made from opaque Cow Head chert (lithic type 1), 47 made from translucent Cow Head chert (lithic type 2), 4 made from grainy grey chert (lithic type 3), 6 made from light grey chert (lithic type 5), 7 made from blue-grey chert (lithic type 6), 5 made from mottled grey chert (lithic type 8), 4 made from slate-like chert (lithic type 9), 3 made from opaque brown chert (lithic type 10), 6 made from dense black chert (lithic type 13) and a single example made from Ramah chert (lithic type 14).

Quartz Crystal Microblades   Total=22; Figure 27, s-z

Dimensions for the Complete Examples

length	(n=14)	range 12.0 - 32.0 mm	mean 19.8 mm
width	(n=14)	range 3.0 - 8.5 mm	mean 6.5 mm
thickness	(n=14)	range 1.0 - 4.5 mm	mean 2.6 mm

The quartz crystal microblades recovered from the site include 14 complete specimens (12 with double arrises and 2 with a single arris each), 7 proximal fragments (all with double arrises) and a single distal segment (also displaying a double arris). Five of the microblades display signs of hafting modification; 2 exhibit a single small notch along the proximal half of the right lateral edge, one exhibits a single notch along the proximal half of the left lateral edge, and 2 display a pair of side-notches at the proximal end of the blade. One of the latter specimens also possesses retouch along the distal end. Lithic material is type 15.

Microblade Cores Total=17; Figure 28

A total of 17 microblade cores and core fragments was recovered from Broom Point, 13 from the 1982 investigations and 4 from the 1984 excavations. To facilitate description, these can be separated into chert microblade cores and core fragments, and quartz crystal microblade cores and core fragments.

Chert Microblade Cores Total=6; Figure 28, a-d

A total of 6 microblade cores and core fragments was recovered from Broom Point including a single non-fragmentary microblade core (Figure 28, a), an exhausted microblade core (Figure 28, c) and 4 microblade core fragments (Figure 28, b, d and e). All exhibit evidence of blade removal on at least one surface. The complete example is made from dense black chert (lithic type 13) and measures 54.2 mm in length, 43.4 mm in width, and 28.4 mm in thickness. It is an excellent example of a wedge-shaped core, exhibiting evidence of platform preparation and displaying 5 parallel and adjacent blade scars along one surface, all struck from the same direction. It is not yet exhausted.

The exhausted example is smaller and irregular in shape, measuring 25.7 mm in length, 12.7 mm in width, and 8.4 mm in thickness. It is also made from dense black chert (lithic type 13), and exhibits platform preparation and a number of blade removal scars. The remainder of the core fragments have a mean length of 46.6 mm. Three are made from opaque Cow Head chert (lithic type 1) and one example is made from light grey chert (lithic type 5). The function of these specialized cores was to produce the chert microblades (or similar examples) discussed in the above section.

<u>Quartz Crystal Microblade Cores</u> Total=11; Figure 28, f-k

<u>Dimensions for the Non-fragmentary Cores</u>

length	(n=6)	range 15.7 - 34.0 mm	mean 26.9 mm
width	(n=6)	range 13.0 - 30.0 mm	mean 17.4 mm
thickness	(n=6)	range 3.4 - 18.0 mm	mean 10.9 mm

A total of 11 clear quartz crystal cores and core fragments was recovered from the site. Of these, 6 are non-fragmentary and 4 represent core fragments. In addition, one example of raw material has been included in this subcategory as a potential core; an unmodified, naturally occurring quartz crystal measuring 30.8 mm in length, 7.0 mm in width, and 7.0 mm in thickness (Figure 28, k).

Of the 6 non-fragmentary examples, 3 are bipolar. The remaining 3 have blades removed from one direction and from one surface only. All of the cores and core fragments represent natural crystals that have been modified to form wedge-shaped cores. The non-fragmentary examples exhibit platform preparation on one surface, with blade scars appearing on the opposite surface. The function of these quartz crystal cores was clearly associated with the production of the minute quartz crystal microblades already described (or similar examples). Lithic material is type 15.

Burin-like-tools   Total=9; Figure 26, e-k

A total of 9 burin-like-tools and tool fragments was recovered from Broom Point, 7 examples from previous investigations and the remaining 2 from the 1984 excavations. Only 3 of the specimens are relatively intact. Eight of the burin-like-tools and burin-like-tool fragments are made from green-banded to black nephrite (lithic type 18). The remaining fragment is made from opaque Cow Head chert (lithic type 1). One of the specimens exhibits a single notch that has been ground into the right lateral edge near the base (Figure 26, g). Another exhibits the same plus the remnant of a second notch on the left lateral edge - base junction (Figure 26, f). The third specimen possesses multiple ground notches, 2 on the right lateral edge and a single notch on the left lateral edge at midsection (Figure 26, e). The former 2 examples display double-bevelling along the left lateral edge as well as on the distal end. The point of juncture of the left lateral edge and the distal end (at an angle of approximately 90°) forms the working edge. Scarring and polishing are visible under 40x magnification. In the case of the third specimen, the left lateral edge is ground flat, angling inward to meet a double-bevelled distal end (again at about 90°). This point of juncture represents the working edge and bears traces of utilization. All of the above examples have been ground flat on both the dorsal and ventral surfaces and on the remaining edges. Only the multi-notched specimen possesses an intact base. The measurements for this complete example are as follows: 35.1 mm in length, 19.2 mm in width, and 3.3 mm in thickness.

The remaining nephrite fragments (n=5) have also been ground flat on both surfaces and display single to double-bevelled edges where observable (Figure 26, i-k). The chert burin-like-tool fragment also exhibits bifacial grinding and polish (Figure 26, h). Burin-like-tools are usually interpreted as engraving devices, used to work organic materials such as bone, antler, ivory and wood. They may also have been used to incise softer lithic materials, such as slate or soapstone. Similar examples of relatively complete burin-like-tools have been recovered from other Middle Dorset sites in western Newfoundland, including the Phillip's Garden site (Harp 1964: Plate XVIII, 7-11).

<u>Tip Flute Flakes</u> Total=97; Figure 22, o-r

A total of 97 tip flute flakes and flake fragments was recovered from Broom Point, 17 from the 1982 investigations and 80 from the 1984 excavations. The tip-fluting process was an important step in the manufacture and maintenance of Middle Dorset harpoon endblades at Broom Point, as evidenced by the tip-fluting displayed on 6 of the 13 endblade preforms and on 9 of the 12 finished triangular endblades from the assemblage. By removing a pair of flakes from the tip of an endblade during its manufacture it becomes both thinned and sharpened. The tip-fluting process would be repeated whenever the endblade required resharpening. An endblade undergoing this resharpening process would gradually diminish in size through time, exhibiting a continual reduction in its length to width ratio.

The by-products of the tip-fluting process are the distinctive tip flute flakes. A pair of flakes removed from a single endblade can be classified as either right or left, depending on which side of the endblade they were removed from. It is also possible to determine whether the tip flute flakes are primary or secondary. The latter bears a small linear facet resulting from the removal of the former. All are more or less triangular in form, but dimensions vary depending on the size of the endblade they were removed from.

In the Broom Point collection, the breakdown of tip flute flakes is as follows: 16 right primary tip flute flakes, 19 left primary tip flute flakes, 32 right secondary tip flute flakes and 28 left secondary tip flute flakes. Lithic material utilized includes 19 tip flute flakes made from opaque Cow Head chert (lithic type 1), 36 made from translucent Cow

Head chert (lithic type 2), 18 made from opaque grainy grey chert (lithic type 3), 6 made from opaque green chert (lithic type 4), 5 made from light grey chert (lithic type 5), 2 made from blue-grey chert (lithic type 6), 4 made from opaque red chert (lithic type 7), a single example made from mottled grey chert (lithic type 8), 2 made from opaque brown chert (lithic type 10), 3 made from grey-green chert (lithic type 11) and a single example made from Ramah chert (lithic type 14). As an added note, 3 matching pairs of tip flute flakes were identified in the assemblage, all left primary - right secondary combinations (Figure 22, o-r).

Retouched/Utilized Flakes   Total=107; Figure 29, a-c

Retouched/utilized flakes make up the second most numerous artifact class in the Broom Point assemblage. Fifty-six are from the 1982 investigations and the remaining 51 are from the 1984 excavations. It is thought that the 107 artifacts in this category represent expediency tools, possibly including some discarded preforms. The former were probably utilized with little or no prior modification, and then discarded; a recently detached flake possesses naturally sharp edges and would lend itself well to a wide range of cutting and/or scraping tasks. The latter probably represent flake blanks that were discarded for some reason after initial modification had begun.

The examples from Broom Point can be separated into four gross types for brief descriptive purposes: minimally retouched/utilized flakes, localized retouched flakes, bifacially retouched flakes, and notched flakes. Minimally retouched/ utilized flakes refer to those examples that exhibit unifacial retouch along one or more lateral edges or the distal end. Without further examination under a high power microscope, however, it is often difficult to distinguish whether the retouch was purposeful or a result of usage. Seventy-nine such examples were recovered from Broom Point. These include 5 primary decortication flakes, 4 secondary decortication flakes, 12 core fragments, 43 secondary flakes, 4 block shatter, 13 non-identifiable flake fragments and a single retouch/resharpening flake.

Localized retouched flakes refer to those flakes which exhibit purposeful, continuous unifacial retouch along a portion of a lateral edge or along both lateral edges. A total of 23 such examples was recovered from Broom Point, including a single primary decortication flake, 3 secondary decortication flakes, a core fragment, 10 secondary flakes and 8 non-identifiable flake fragments. In addition, a single example was recovered from Broom Point that exhibits bifacial retouch. It is made on a secondary flake and possesses localized retouch on both lateral edges of the dorsal surface, and on the distal end of the ventral surface. A single notched example occurs in the assemblage as well. This last specimen is a non-identifiable flake fragment which possesses 3 deep, narrow notches on its lateral edges (Figure 29, b).

The range of lithic material utilized in this artifact class is wide and includes 56 flakes made from opaque Cow Head chert (lithic type 1), 9 made from translucent Cow Head chert (lithic type 2), 8 made from grainy grey chert (lithic type 3), 6 made from opaque green chert (lithic type 4), 4 made from light grey chert (lithic type 5), 8 made from blue-grey chert (lithic type 6), one made from opaque red chert (lithic type 7), one made from mottled grey chert (lithic type 8), 3 made from opaque brown chert (lithic type 10), one made from red-green mottled chert (lithic type 12), 7 made from dense black chert (lithic type 13) and 3 made from Ramah chert (lithic type 14; Figure 29, c).

Hammerstones Total=24; Figure 29, d-f and Figure 30

A total of 24 hammerstones was recovered from Broom Point, 13 from the 1982 investigations and 11 from the 1984 excavations. All are made from locally available medium-grained quartzite beach cobbles (lithic type 17), and range from elongate to ovate to irregular in overall shape. Modification is confined to battering and pitting on one or both ends of the cobbles. It is likely that hammerstones are actually under-represented in the assemblage, as only those examples displaying definite signs of use-wear were collected. Dimensions are probably not as significant as the weights of these tools. They range in weight from 86.1 - 660.6 grams, but fall into three distinct weight groups, which may be a reflection of the different stages of lithic reduction that they were employed in during tool manufacture.

Categories of Non-fragmentary Hammerstones

less than 200 g	(n=6)	range 86.1 - 196.5 g	mean 142.4 g
200 - 400 g	(n=6)	range 226.9 - 390.9 g	mean 306.9 g
greater than 400 g	(n=6)	range 417.8 - 660.6 g	mean 540.3 g

Tool Descriptions

Early Palaeo-Eskimo Component (Figure 31)

There is some evidence for an earlier Palaeo-Eskimo presence at Broom Point. A small number of artifacts have been identified in the Broom Point assemblage as being of probable Groswater affiliation. As this thesis is concerned with the Middle Dorset occupation of the site, description of the Early Palaeo-Eskimo material will be brief. A total of 12 artifacts of proposed Groswater affiliation was recovered from Broom Point including a single side-notched endblade, 5 biface and biface fragments, an endscraper, 2 sideblades, 2 burin-like-tools, and a single tool blank.

Side-notched Endblade Total=1; Figure 31, c

This specimen is made on a secondary flake of opaque grey-green chert (lithic type 11). It is 24.0 mm in length, 16.0 mm in width and 4.0 mm in thickness. The overall shape is ovate, with excurvate lateral edges, a pointed tip and a slightly concave base. A pair of shallow side-notches are located close to the base. Retouch is complete and random on the dorsal surface, and confined to the lateral edges on the ventral surface. The basal edges are pointed and the base is bifacially thinned. It has been assigned to the Groswater component from the site on the basis of its anomalous shape.

Bifaces and Biface Fragments   Total=5; Figure 31, g-k

One biface was recovered with hafting modifications (Figure 31, i). This specimen is symmetrical lanceolate in overall shape, with slightly sinuous excurvate lateral edges, a slightly expanding stem and a rounded tip. The side-notches near the base are shallow and wide, the basal edges are rounded and the base is roughly straight. It is 69.5 mm in length, 28.6 mm in width and 5.7 mm in thickness. This artifact is the only tool in the assemblage made from a fine-grained, highly siliceous quartzite (lithic type 16). The retouch is bifacially complete and random. The biface has been tentatively assigned to the Early Palaeo-Eskimo component on the basis of its anomalous shape and its unusual lithic material.

Four bifaces/biface fragments without hafting modifications were also assigned to the Groswater component; one asymmetrical example and 3 bipointed examples. The asymmetric biface displays a markedly convex left lateral edge, a slightly concave right lateral edge, a pointed tip and a slightly convex contracting base (Figure 31, k). It measures

62.3 mm in length, 25.2 mm in width and 4.1 mm in thickness, and is made from opaque grey-green chert (lithic type 11). Bifacial retouch is minimal and consists of broad, flat flake scars on both surfaces. This specimen is similar to examples from Factory Cove, a Groswater site located on Cow Head (Auger 1983).

The remaining 3 specimens, a single complete example and 2 fragments, represent bifaces made from chipped and partially ground slate (lithic type 19). The complete example (Figure 31, j) was found in 3 pieces. The lateral edges are irregular, although roughly excurvate, and both ends are pointed. There is no evidence of grinding on this specimen, and retouch is marginal bifacial. One of the fragments represents a distal portion of a bipointed biface (Figure 31, g). Both lateral edges are slightly excurvate and the end is pointed. Retouch is collateral on the dorsal surface and marginal on the ventral surface. Grinding and polish are displayed on the ventral surface as well. The second fragment is made from a red silicified slate (Figure 31, h). It is a proximal or distal fragment with a rounded tip or base, and exhibits a small degree of polishing on both surfaces. The lateral edges are bifacially chipped, and the biface may represent an unfinished tool. The distinctive bipointed form, in addition to the presence of grinding on the bifaces, has resulted in the classification of these artifacts as part of the Groswater component from the site.

<u>Dorsally Modified Endscraper</u> Total=1; Figure 31, f

One anomalous endscraper has been included in this section. The artifact is made from opaque grey-green chert (lithic type 11), and measures 42.1 mm in length, 27.4 mm in width and 4.5 mm in thickness. It is more or less rectangular in overall shape, although the lateral edges contract toward the proximal end. A point of juncture on the left lateral edge at midsection defines a body and a "stem." The right lateral edge is excurvate - incurvate - excurvate, adding to a "stemmed" appearance. This may have been a hafting modification. Complete random flaking occurs on the dorsal surface and retouch occurs as well on the proximal half and the lateral edges of the ventral surface. The bit angle is low. As an additional modification, the proximal half of the lateral edges and the proximal end of the endscraper are ground. The anomalous shape of the endscraper led to its inclusion in the Groswater component.

<u>Sideblades</u> Total=2; Figure 31, d and e

Two sideblades are also believed to be of Groswater affiliation. Both are made from opaque grey-green chert (lithic type 11). One example is small and ovate in overall shape, with excurvate lateral edges and a blunt tip (Figure 31, d). Retouch is fine and completely bifacial. The second example is unique among sideblades in that it possesses a well-defined side-notch on the left lateral edge. The shoulder angle is obtuse and the basal edge is rounded. The artifact is ovate in overall shape with excurvate lateral edges, a pointed tip and a slightly convex base. Measurements for the 2 artifacts are similar; the former example is 21.6 mm in length, 10.2 mm in width and 2.2 mm in thickness, while the notched specimen is 23.2 mm in length, 10.6 mm in width and 2.6 mm in thickness.

Although anomalous, the notched example (Figure 31, e) has been identified as a sideblade by virtue of its similarity in size, shape, material type and general manufacture with the first example (Krol and Tuck 1985). Sideblades are interpreted as tools set along the edge of a weapon (such as a harpoon) to increase penetration. Sideblades are rare in Middle Dorset assemblages, but are more common in Early Palaeo-Eskimo sites (Tuck 1982b:14).

<u>Burin-like-tools</u> Total=2; Figure 31, a and b

Two burin-like-tool fragments of proposed Groswater affiliation were also identified in the assemblage. The first example is a tip fragment made from translucent Cow Head chert (lithic type 2), and is truncated triangular in overall shape (Figure 31, a). Both lateral edges are straight, converging slightly toward the distal end, which is ground to a double-bevel. The right lateral edge and the distal end meet to form the working edge at an angle of slightly less than 90°. Grinding and polish also appear on the dorsal surface near the tip.

The second example is also a tip fragment, this time made from opaque grey-green chert (lithic type 11; Figure 31, b). It is both chipped and ground along one lateral edge, and ground to a double-bevel on the opposite lateral edge. Burin-like-tools such as the above examples are typical of the Groswater phase of the Early Palaeo-Eskimo tradition, and numerous examples have been recovered from the Factory Cove site (cf. Auger 1983; Tuck 1982b:19).

Blank Total=1

A single tool blank, believed to be affiliated with the Groswater component from Broom Point, was also recovered during the 1982 excavations. It is made from opaque Cow Head chert (lithic type 1), and represents an early stage of tool manufacture. It is a large secondary flake which has been thinned and shaped by further flaking. The proposed end-product is not recognizable at this stage. This specimen resembles blanks from the Factory Cove site. Its principal attribute supporting this proposed affiliation is its thinness, which was accomplished by removing large, flat retouch flakes from both surfaces (Tuck 1982b:24).

Discussion

The paucity of diagnostic Groswater cultural material recovered from Broom Point is obvious from the above descriptions. It is possible, however, that a number of the microblades and microblade cores included in the Middle Dorset component descriptions were actually affiliated with this earlier Palaeo-Eskimo occupation of the site. Both Groswater and Middle Dorset cultures, as well as other Arctic Small Tool tradition peoples, are known to have shared this specialized technology. Unfortunately, there is not enough diagnostic information to date to enable the separation of Groswater and Middle Dorset microblades and microblade cores. This holds true for other artifact classes as well, including biface fragments, biface preforms, retouched/utilized flakes and hammerstones, as well as for the debitage collected from the site. One exception with regard to the debitage may be found in the opaque grey-green chert (lithic type 11), which is associated with much of the Groswater material described earlier (see the lithic type discussion for further detail). Given the predominance of the diagnostic Middle Dorset material from the site, however, it seems likely that the majority of the artifacts in question can be confidently assigned to the more recent Middle Dorset occupation of Broom Point.

Debitage (Tables 5-7)

Debitage can be defined as the "residual lithic material resulting from tool manufacture" (Crabtree 1972:58). The debitage from the Broom Point assemblage has been segregated into major flake/core categories according to lithic type. These include the by-products of the two main stages of lithic reduction: primary reduction, which involves the shaping of a core or core tool by the removal of the cortex; and secondary flaking, which consists of further reduction of the lithic material in the production of flake blanks or in the completion or resharpening of the tool itself. The seven debitage categories considered in the analysis of the Broom Point material are as follows:

Cores/core fragments refer to the pieces of lithic material from which the associated flakes were removed. They are characterized by the presence of flake scars and most exhibit platform preparation. Core rejuvenation flakes have also been lumped into this category.

Primary decortication flakes are produced by the initial removal of cortex from a core. They exhibit dorsal surfaces which are completely covered in cortex. Primary decortication flakes are usually only present when nodules or weathered lithic material is being dealt with.

Secondary decortication flakes are also concerned with the primary stage of lithic reduction, and exhibit a dorsal surface, approximately half of which is covered with cortex, the other half of which represents a flake scar from previous flake removal.

Secondary flakes include the various types of flakes produced during the immediate secondary reduction of lithic material, and include such flake types as expanding flakes, contracting flakes, ridge flakes, rectangular flakes, tabular flakes and end-struck flakes. Not all of these secondary flakes would have been suitable for tool blanks, and a large percentage probably represent rejects.

Block shatter is usually produced during the reduction of lithic materials which possess poor fracturing qualities. Most are rejects. A number of unidentifiable core fragments may have been inadvertently included in this category in the analysis, as only those fragments with definate negative flake scars and platforms were included in the core category.

Non-identifiable flake fragments include those flakes too fragmentary to assign confidently to a definite flake category. Usually the proximal ends of these broken flakes are missing.

Retouch/resharpening flakes include flakes resulting from both primary and secondary retouching of a tool. Primary retouching produces bifacial, unifacial and marginal retouch flakes, while secondary retouching produces flakes resulting from notching, stemming, thinning, use-wear and resharpening activities. These flakes are characteristically small in size and can easily be separated from the secondary flakes.

Discussion of Lithic Types (Tables 2-7)

The objectives of the lithic type analysis were 1) to determine the range of lithic material present at Broom Point and describe it, and 2) to attempt to give the general sources for the material (*i.e.*, local versus imported lithics). The classification of the lithics is based on physically observed characteristics that are identifiable without magnification (i.e., using hand samples only). Thin section analysis of the lithic material was not attempted as the majority of the lithic types were suspected to be indigenous to Broom Point and the surrounding area. Generally, thin section analysis of cherts from the same region is unsuccessful, due to the variability that can be found within a single quarry source, not to mention the wide variability that can occur within a single sedimentary unit.

The Broom Point lithic assemblage is composed primarily of cryptocrystalline silicas, represented by a variety of cherts as well as quartz crystal, although examples of quartzite, nephrite and silicified slate are present as well. Some of the cherts border on chalcedonies in appearance. Without further testing to determine specific structure, however (i.e., fiberous for chalcedonies versus granular for cherts), the two lithic materials are virtually indistinguishable. It was decided that the term chert would be employed to refer to questionable chalcedonies in the following descriptions. With the exception of lithic type 11, discussions are concerned primarily with the Middle Dorset material from the site. The description of the lithic types includes the detailing of such characteristics as the range of colour within a lithic type, structure, fracture, grain size, relative silica content, translucency, lustre, possible alterations (cultural and natural), as well as a brief discussion regarding possible sources for the material.

Lithic Types (1-19)

1. Opaque Cow Head chert

This material is very distinctive and dominates the Broom Point assemblage, forming 31.82 % of the tools and 67.19 % of the debitage. It is green to dark grey in colour, often exhibiting black banding. A fair amount of homogenous dark grey material was also recovered and was initially kept separate from the banded chert, until it was discovered that the solid coloured chert graded into the banded chert in a large number of the samples. The chert also possesses inclusions, such as fossils, and bedding fractures. Flaking characteristics range from poor to fair to good. The majority of the specimens exhibit some degree of step fracturing (apparent even on the tools), although some specimens of the chert exhibit superior flaking qualities, depending on the silica content, grain size and the absence of inclusions. Grain size ranges from microcrystalline to cryptocrystalline in the sample, and silica content is low to medium. The material is opaque with a dull and flat, to waxy lustre. Thermal alteration is apparent on a number of the secondary flakes, and iron staining occurs on a large amount of the material. The cortex, where present, occasionally shows signs of weathering and has a slate-like appearance.

The chert is local to the vicinity of Broom Point, and is available in both cobble form as well as in chert seams within the limestone outcrops. The best known quarry source is the Cow Head outcrop located a few kilometres north of Broom Point on the Cow Head peninsula (James and Stevens 1982). A second source has also been located at the base of cliffs beneath the Lobster Cove lighthouse in Rocky Harbour (Nagle 1985). Chert from both localities are found in the same Cow Head Group sedimentary unit, and possess similar colouration and banding (Nagle 1985). It is extremely likely that other outcrops containing the banded chert exist in the immediate vicinity of the Broom Point site, that have yet to be discovered or are presently inaccessible, perhaps due to modern vegetation cover.

2. Translucent Cow Head chert

This material borders on a chalcedony in appearance and makes up 26.28 % of the tools and 19.09 % of the debitage from the Broom Point assemblage. It has been found to grade into the opaque Cow Head chert in a number of specimens, but has been assigned a separate lithic type due to its widely variant nature. It is a light to dark brown in colour, depending on the thickness of the specimen. The chert is homogenous in colour with few structural flaws and possesses excellent conchoidal fracture, although some examples of blocky fracture do exist. It is cryptocrystalline, highly siliceous, translucent, and has a sub-vitreous lustre. No thermal alterations were noted although some patination of the material occurs, and weathering is evident on the cortex examples. Sources are local, presumed to be the same as lithic type 1, with both cobble and quarried examples being present in the assemblage.

3. Grainy grey chert

This chert makes up 6.32 % of the tools and 7.91 % of the debitage collected from Broom Point. The material ranges from light to medium grey in colour, with black and white speckles which give it a grainy appearance. A few structural flaws are noticeable, although flaking characteristics are usually good with only a few examples of fracturing. The chert is cryptocrystalline, with medium silica content. It is generally opaque with occasional translucency around the edges. Lustre is waxy, and there is no evidence for heat treating or other alterations. The source is probably local, as some cortical material was retrieved, though probably not immediately available to the occupants of the site as the cortical count is low. The material resembles slightly the description of light bluish-black chert with white speckles described by Nagle from an outcrop on the northern shore of the Inner Tickle at St. Pauls Inlet (Nagle 1985).

4. Opaque green chert

This chert makes up only 2.57 % of the tools and 1.94 % of the debitage from Broom Point. It is a homogenous medium green in colour with no evidence of banding. Fracture is generally good with some step-flaking. The chert is cryptocrystalline, and has a medium silica content. It is opaque with occasional translucency around the specimen edges and possesses a waxy lustre. There is no evidence for thermal modification or natural alterations of the material. The source is believed to be local and fairly close by, based on the fact that cortical material was retrieved. The material resembles the description of a medium green chert found outcropping on the northern side of Green Point in Gros Morne National Park, as reported by Nagle (1985).

5. Opaque grey chert

This chert makes up only 3.36 % of the tools and 0.24 % of the debitage from Broom Point. It is light to medium grey in colour with no evidence of banding. It possesses occasional structural flaws and its flaking characteristics range from poor to excellent. It is cryptocrystalline with regard to grain size, with a medium silica content. The chert is opaque with a waxy to sub-vitreous lustre, and displays no evidence of thermal or natural alterations. The source is local; small seams of such chert were located in the limestone outcrops on the Broom Point headland during the 1984 season. Most of this chert is highly fractured, although some good quality material is available. Nagle reports on this source location as well (Nagle 1985).

6. Blue-grey chert

This chert makes up 4.74 % of the tools and 0.62 % of the debitage from the site. It is a light blue-grey in colour, exhibiting occasional bedding fracture, but with generally excellent flaking characteristics. It is cryptocrystalline, highly siliceous, and semi-translucent, with a sub-vitreous lustre. One example appears to have undergone thermal alteration, exhibiting a partial colour change to red. The source is thought to be local, but probably not immediately available to the occupants of the site, as only a small amount of cortical material was retrieved,

7. Opaque red chert

This chert is rare in the assemblage and makes up only 1.19 % of the tools and 0.23 % of the debitage from the site. It is a homogenous red in colour, with no adverse structural characteristics and generally good flaking qualities. It is cryptocrystalline with a medium silica content, opaque, and has a dull to slightly waxy lustre. No alterations were identifiable. It is thought to represent a non-local lithic material as no cortical shatter was retrieved from the site.

8. Mottled grey chert

This chert represents 1.58 % of the tools and 1.09 %

of the debitage from the site. It is a light grey in colour with white speckles and mottling. Flaking characteristics are good, and the chert is microcrystalline with a granular structure similar to Ramah chert. The silica content is medium. The chert is semi-translucent to opaque, with a waxy lustre. One example shows evidence of thermal alteration. The presence of cortical material indicates a local source for this lithic type.

9. Slate-like chert

This material makes up 1.38 % of the tools and 0.25 % of the debitage from the Broom Point assemblage. It is light brown to light grey in colour and possesses inclusions and occasional mottling. Step-fracturing occurs in some specimens. The chert is cryptocrystalline with a smooth, almost ground texture. Silica content is low, and the material is opaque with a dull, flat lustre. No evidence of any alterations is present. As no cortical material was retrieved, and the percentage of the chert in the site assemblage is low, it is thought that this lithic type is non-local. Although it does bear similarities to the slate-like cortex from some of the opaque Cow Head material (lithic type 1), the cortex examples appear too thin to have been worked.

10. Opaque brown chert

This chert makes up 1.58 % of the tools and 0.15 % of the debitage from Broom Point. It is light to medium brown in colour with no evidence of banding, although occasional black inclusions are visible. Flaking characteristics are good and the chert is cryptocrystalline with a low to medium silica content. It is opaque with a dull, flat lustre. Thermal alteration is visible on a number of specimens and consists of a change in lustre to sub-vitreous. Some patination also occurs. The source is thought to be local cobbles as cortical material is present in the assemblage.

11. Grey-green chert

This chert makes up 0.79 % of the tools from the Middle Dorset component of the Broom Point assemblage and 50.0 % of the tools thought to be associated with a small Groswater component. That it appears to represent a preferred lithic material among the Early Palaeo-Eskimo inhabitants of the site is evident, although it is not exclusive to this component. This grey-green chert also makes up 0.96 % of the debitage from the site, some or all of which may be of Groswater affiliation. The chert ranges from grey-green to occasional brown-green in colour, and exhibits occasional rust coloured banding and mottling. The flaking characteristics are poor in general, with the majority of the material being highly fractured, although better quality examples are found in some of the tools. The chert is cryptocrystalline with a medium silica content, opaque, and has a dull to slightly waxy lustre. There is no evidence for thermal modification or natural alteration. It does not appear that the chert is of local origin as no cortical material or shatter was retrieved from the site.

12. Red-green mottled chert

This chert makes up 0.40 % of the tools from Broom Point. It is mottled red-green in colour with excellent flaking characteristics. The chert is cryptocrystalline and highly siliceous. It is opaque with a waxy to sub-vitreous lustre. The possibility exists that this chert is the product of thermal alteration. If not, it represents a non-local material, as no debitage for this lithic type was retrieved during excavations.

13. Dense black chert

This material makes up 3.16 % of the tools from Broom Point. It is a homogenous matt black in colour with a high density, probably reflecting a high iron content. It has excellent conchoidal flaking characteristics, is cryptocrystalline and highly siliceous. The chert is opaque with a sub-vitreous lustre. There is no evidence for thermal or natural alterations. The source is believed to be non-local as no debitage for this lithic type was recovered during excavations at the site.

14. Ramah chert

This distinctive chert makes up 1.19 % of the tools and 0.05 % of the debitage from the Broom Point assemblage. It is clear to light grey in colour with occasional black mottling. Flaking characteristics are good and the chert is microcrystalline with a granular texture. It is highly siliceous, translucent, and has a sub-vitreous lustre. There is no evidence of alteration. The material is exotic to the area, and has its source in the well-documented Ramah beds from northern Labrador.

15. Quartz crystal

This material represents a crystalline form of silica, and makes up 6.72 % of the tools and 0.24 % of the debitage from Broom Point. It is clear translucent with excellent conchoidal fracture. The material is cryptocrystalline, highly siliceous, and has a vitreous lustre. It is probably indigenous to the area and associated with veins in local granite.

16. Fine-grained quartzite

This metamorphic material represents only 0.04 % of the debitage from the site. No tools of Middle Dorset affiliation were recovered made from this lithic type, although a biface from the Early Palaeo-Eskimo component was retrieved made from fine-grained quartzite. The material is light grey to grey-blue in colour with poor to good flaking characteristics. It is microcrystalline with a medium silica content, opaque, and has a waxy lustre. The source is probably from local beach cobbles.

17. Medium-grained quartzite

This quartzite makes up 4.74 % of the tools from the site, all of which represent hammerstones. Colour ranges from light grey to medium grey to brown to pink. The material is microcrystalline and opaque, with a dull, flat lustre. The source is found in easily accessible local beach cobbles.

18. Nephrite

This distinctive material makes up 1.58 % of the tools from the Broom Point assemblage, all burin-like-tools. It is a solid green to black in colour, the former often exhibiting black banding. The material is opaque with a dull, flat lustre, which becomes glossy when ground. It is microcrystalline in texture with poor flaking qualities. The material is exotic; the only known sources for nephrite in the Eastern Arctic are located on the extreme northern tip of Newfoundland, although other sources are suspected to occur along the Labrador coast (Nagle 1985).

19. Slate

This metamorphic material makes up 0.20 % of the tools (a ground slate lance) from the Middle Dorset component of the site, although a number of chipped and ground slate bifaces are present in the Groswater component. The slate is light grey to brown to red in colour, with bedding fractures visible in the unsilicified material. Flaking characteristics are poor and the material is microcrystalline, opaque, and has a dull, flat lustre even when ground. The lithic material is probably local in origin.

Results of the Analysis

Lithic Use Pattern

Both chipped and ground stone technologies are represented in the Middle Dorset component from Broom Point. The majority of the tools (93.28 %) pertain to a chipped stone technology, while the remaining 6.72 % are products of a ground stone industry.

There is a definite preference for silicas in the manufacture of tools in the chipped stone industry. These silicas are represented by quartz crystal as well as a wide variety of local and non-local cherts. Good quality silicas lend themselves well to tool manufacture, as the fracture of the stone can be controlled by the flintknapper;

> All have the necessary qualities of elasticity, homogeneity; are cryptocrystalline, isotropic and highly siliceous. Homogeneity allows the worker to fracture the stone in any direction. The material must also be free of flaws, cracks and inclusions; otherwise it would break prematurely or cause step and hinge fractures (Crabtree 1972:5).

The ground stone industry includes materials not generally suitable for chipped stone technology, such as tools made from slate and nephrite in the assemblage. Slate, for example, will fracture only along bedding planes and cannot be controlled to any great extent during pressure flaking. Shaping is thus accomplished by grinding. The hammerstones from the Broom Point assemblage are also included in this category, although in the case of this artifact type the qualities of fracture are not as important as the hardness and shape of the material.

Local versus Non-local Material

A decrease in waste material is generally expected relative to the distance from a quarry or source. The descriptions of the lithic types from Broom Point and their presumed sources have already been given. As a brief summary, it can be noted that the Cow Head varieties of chert dominate the assemblage; opaque Cow Head chert (lithic type 1) and the translucent Cow Head chert (lithic type 2) together form 86.28 % of the total debitage collected, including 86.59 % of the cores and core fragments, 95.55 % of the primary decortication flakes, 89.26 % of the secondary decortication flakes, 89.90 % of the secondary flakes, 95.37 % of the block shatter, 94.54 % of the non-identifiable flake fragments and 83.49 % of the retouch/resharpening flakes. The proximity of the source for this lithic material is reflected in the high percentage of both primary and secondary reduction debitage made from Cow Head chert in the Broom Point assemblage.

The only other local lithic material of any significance in the assemblage is the grainy grey chert (lithic type 3), which makes up only 7.91 % of the total debitage count, but is represented by a full range of both primary and secondary reduction material. It is likely that the source for this lithic type is also close to the site, although the material may not have been as abundant as the Cow Head cherts. The remainder of the local lithic material (lithic types 4, 5, 6, 8, 10, 15, 16, 17 and 19), constitutes only a small portion of the waste material retrieved from Broom Point (4.32 %), indicating that the sources, while local, either were not abundant or were not located in the immediate vicinity of the site.

With regard to the non-local lithic types (7, 9, 11, 12, 13, 14 and 18), most appear to have been brought into the site in an already reduced state, as flake blanks or finished tools. Debitage that does occur takes the form of secondary or retouch/resharpening flakes, indicating that only final shaping and maintenance of the tools was taking place. The small amount of waste material associated with these exotics again reflects distance from their original sources. Their presence in the assemblage indicates the existence of trading or exchange patterns, or perhaps population movements among the Middle Dorset in Newfoundland and Labrador.

Lithic Type versus Tool Type (Tables 2-4)

Specific lithic types appear to have been selected for in the manufacture of some of the tools from the Broom Point assemblage. With regard to endblades, 56.25 % are made from translucent Cow Head chert (lithic type 2), followed by 25.0 % made from opaque Cow Head chert (lithic type 1), 12.50 % made from blue-grey chert (lithic type 6) and 6.25 % made from grainy grey chert (lithic type 3). In addition, 37.1 % of the tip flute flakes (which are associated with endblade manufacture and maintenance) are made from translucent Cow Head chert, 19.59 % are made from opaque Cow Head chert, 18.56 % are made from grainy grey chert, and the remaining 24.74 % are made from other varieties of local and non-local cherts. The preference for the translucent material in endblade manufacture is, no doubt, associated with the superior flaking qualities of this chert and its ability to produce an extremely sharp edge when worked (see the lithic type 2 description). It is interesting to note that for the endblade preforms, 76.92 % are of opaque Cow Head chert, while only 15.39 % are made from translucent Cow Head chert and 7.69 % from grainy grey chert. This discrepancy can be explained by the probability that the majority of the opaque preforms represent material discarded because of flaws in the stone, or because of premature breakage due to the poorer quality of the chert being worked.

Opaque Cow Head chert appears to have been preferred in the manufacturing of bifaces from the site, at least with regard to the bifaces without hafting modifications, all of which are made from this material. This may reflect the possibility that the translucent material was not available in large enough pieces to enable the manufacture of large tools, or that the bifaces required a stronger edge (as opposed to the endblades which would require a very sharp edge) for use in butchering/cutting activities. If the non-hafted bifaces represent expediency tools, the preference for the opaque Cow Head chert material may be a reflection of the handiness of the opaque waste material. Of the bifaces with hafting modifications, two are made from opaque Cow Head chert, two are made from translucent Cow Head chert and one is made from the non-local Ramah chert.

With regard to endscrapers from the site, the division between the opaque and the translucent Cow Head cherts is equal, each representing 39.53 % of the total endscraper count. The remaining 20.94 % of the endscrapers are made from a variety of local and non-local cherts, and in one case, quartz crystal. The four end-of-blade scrapers are all made from translucent Cow Head chert (see the microblade discussion below), and for the concave sidescrapers, one is made from opaque Cow Head chert, two are made from translucent Cow Head chert and one is made from blue-grey chert.

In the microblade category, translucent chert appears to have been selected for (35.0 % of the total count), perhaps indicating the desirability of a sharp cutting edge for the tools in this artifact class. Opaque Cow Head chert makes up 22.86 %, quartz crystal (which also produces extremely sharp edges) makes up 15.71 %, and other varieties of local and non-local cherts make up 26.43 % of the microblades.

For retouched/utilized flakes, 52.34 % are made from opaque Cow Head chert, 8.41 % are made from translucent Cow Head chert and the remaining 39.25 % are made from a variety of local cherts. This also probably reflects a preference for a strong edge for these tools, or the availability of the opaque refuse material at the site.

In the ground stone industry from Broom Point, the relationship between artifact classes and a particular lithic material type is more direct. The one ground stone lance recovered from the Middle Dorset component is made from a silicified slate, eight of the nine burin-like-tools are made from nephrite, and all of the hammerstones are made from medium-grained quartzite beach cobbles.

Thermal Modification of Lithic Material

Possible thermal modification is indicated in a number of the specimens from Broom Point (lithic types 1, 6, 8 and 10), detected because of partial to complete colour change in the lithic material, as well as a change in lustre from waxy to sub-vitreous. Experiments have shown that many lithic materials can be improved for flaking through thermal alteration; the lithic material becomes more elastic without becoming brittle, and the edges produced are sharper than for the untreated material (Crabtree and Butler 1964). It is not clear whether the thermal alteration observable in the Broom Point material was intentional or the result of natural or accidental forces. However, as only a very small sample is affected (0.21 %), the latter is the most probable.

Chapter 5

INTERPRETATION OF BROOM POINT

The purpose of this chapter is to attempt to determine the nature of the Broom Point site (DlBl-1) through the analysis of its apparent size, function(s), intra-site variability, duration of occupation (chronological range) and seasonality. Unfortunately, no direct evidence of economy in the form of either faunal or floral remains was recovered during excavations, despite the screening of the cultural levels through one-quarter inch mesh, the flotation of hearth fill and the intensive testing of the adjacent marsh area.

Although lack of faunal and floral remains from Broom Point results in a major loss of interpretative ability, especially with regard to the determination of site seasonality and resources exploited, evidence regarding the presumed economic activities of its prehistoric inhabitants can be drawn indirectly through various off-site data techniques, particularly the reconstruction of potential resource availability. In utilizing off-site data, however, it is important to document any changes in physiography, climate, flora or fauna that may have taken place in the study area since the Middle Dorset occupation of Broom Point (these will be discussed in a later section). An underlying assumption is also made; that species present in the region in the past would have possessed the same behavioural characteristics and migratory traits that they exhibit today, although it is probable that fluctuations in resources may have occurred on occasion in response to variations in local weather patterns (such as adverse wind direction in the late spring keeping drift ice and associated harp seal herds away from the shore, or extreme cold water temperatures affecting the spawning habits of certain fish).

In addition to off-site data, evidence regarding presumed economic activities carried out at Broom Point can also be drawn indirectly through the technology of the site inhabitants, inferred from the tools in the artifact assemblage. The intra-site distribution of tools, debitage, features and structures, and the relative frequencies of tool types in the artifact assemblage, can also help in the reconstruction of site function, duration of occupation and seasonality.

Site Extent

The Broom Point site is presently located on one of the small, low-lying, grassy promontories that comprise the Broom Point headland, overlooking the Gulf of St. Lawrence at an altitude of approximately 4.3 metres above sea level (Figures 2 and 18). At the time of the Middle Dorset occupation, however, the site was likely situated on or near an active shoreline represented by a sand and cobble beach. As has been previously mentioned, the Northern Peninsula has been undergoing postglacial isostatic uplift (albeit at a decreasing rate) since about 13,000 B.P. (Grant 1972). Middle Dorset cultural material has been retrieved from levels 3 and 4 at Broom Point, the former level consisting of a thin black humus overlying the original surface of occupation, which is represented by level 4, an ancient beach.

On a descriptive level, the Broom Point site would have represented a choice camping locale for a small group of Middle Dorset people, providing an excellent view of the Gulf of St. Lawrence and the adjoining coastline, and possessing a fresh-water source in the form of a small stream, today located at the site's eastern limit. As well, the promontory is exposed and thus exceedingly windy in the summer, creating a fairly fly-free habitat--probably an attraction of some importance under warm, insect-ridden conditions. The location of the site on a sand and cobble beach would also have provided its prehistoric inhabitants with an easily accessible and unlimited supply of hammerstones for use in lithic reduction and tool manufacture.

The Middle Dorset occupation of the Broom Point site is not extensive, covering an area of less than 1600 square metres at its maximum extent, which is determined by the furthermost range of the debitage scatter, Most of the cultural material, however, is concentrated in a smaller area approximately 576 square metres in size, encompassing the majority of Areas 1, 2 and 3 on the site excavation plan (Figure 3), although much of this "concentration" is represented still by only a thin scatter of tools per square metre. Approximately 124 square metres were completely excavated within the 576 square metre area of concentration of cultural material at Broom Point, or 21.53 %.

Despite intensive, systematic testing there are no indications that the site once extended into the marsh area or that occupation included the remainder of the promontory. Portions of the site at the extreme western end as well as the terrace edge are now gone, the former through road construction and grading, and the latter through wind and wave erosion. However, this would probably have amounted to only a few m^2 in additional area. As has been previously mentioned, much of the area along the northern portion of the site as well as the area immediately adjacent to the road has been disturbed by twentieth century utilization of the Broom Point headland.

Site Function(s)

An examination of the Middle Dorset artifact assemblage from Broom Point can help determine the range of activities performed at the site, based on the assumption that technology is related to economic function. The following represents a complete list of the artifact types recovered from the Middle Dorset component at Broom Point. Frequencies of tool types are believed to be representative for the site, as all apparent concentrations of cultural material (represented by Areas 1, 2 and 3) were completely excavated. A thorough programme of testing in the space between Areas 1, 2 and 3 did not reveal any additional concentrations of cultural material, or noticeable changes in artifact distributions and types (Figure 3).

Tools and Tool Fragments	#	% of total
triangular endblades	12	2.37
side-notched endblades	1	0.20
ground slate lance	1	0.20
endblade fragments	3	0.59
endblade preforms	13	2.57
notched bifaces	5	0.99
unhafted bifaces	11	2.17
biface preforms	11	2.17
dorsally modified endscrapers	19	3.75
marginally retouched "	19	3.75
blade endscrapers	4	0.79
endscraper fragments	5	1.00
concave sidescrapers	4	0.79
unidentifiable tool fragments	4	0.79
chert microblades and fragments	118	23.32
quartz crystal microblades	22	4.35
chert microblade cores	6	1.19
quartz crystal microblade cores	11	2.17
burin-like-tools and fragments	9	1.78
tip flute flakes	97	19.17
retouched/utilized flakes	107	21.15
hammerstones	24	4.74
total	506	100.00

Debitage	#	% of total
cores and core fragments	82	0.83
primary decortication flakes	247	2.49
secondary decortication flakes	121	1.22
secondary flakes and flake blanks	941	9.49
block shatter	993	10.01
non-identifiable flake fragments	531	5.35
retouch/resharpening flakes	7003	70.61
total	9918	100.00

(cf. Tables 2 and 5)

A wide range of activities is reflected in the artifact assemblage. First, in terms of extractive pursuits, the presence of fully functional harpoon endblades, including reworked specimens, indicates that the hunting of marine mammals, probably seal, was being carried out at or near the site. A complex, small sea mammal hunting technology for the Middle Dorset in Newfoundland has been fairly well-documented from sites such as Phillip's Garden and Keppel Island in western Newfoundland (Figure 1), where preserved harpoon heads, foreshafts and lances of bone have been recovered in association with triangular chert endblades and middens containing a large percentage of seal bone, mainly harp (Harp 1964, Wintemberg 1940). However, it is possible that the smaller endblades from the Broom Point assemblage, as well as the side-notched specimen, may have served in the hunting of a variety of small terrestrial mammals, fish or perhaps birds. In addition, the ground slate lance may have been utilized in the dispatching of large marine mammals such as walrus, or in the pursuit of large land mammals such as caribou or black bear.

Unfortunately, evidence (beyond the conjectural level) is lacking regarding the technology used by the Middle Dorset in Newfoundland for the exploitation of terrestrial, avian and piscine resources. There is no evidence at present to indicate knowledge and utilization of the bow and arrow (Linnamae 1975:12), hence all lithic projectile points tend to be interpreted as harpoon endblades, despite the presence and location of notching or the relative size of the blade. In rare sites where organic artifacts are preserved, such as Phillip's Garden, small barbed unilateral and bilateral points of bone may indicate that fishing or birding activities were being carried out, and a variety of bone artifacts of indeterminate function in the site assemblage may have once formed part of a terrestrial hunting technology (Harp 1964:Plates XXIV and XXV). In addition, Wintemberg has stated that the smaller harpoon points from Dorset sites in Newfoundland were probably employed "only in securing fish and perhaps the smaller species of seal" (Wintemberg 1940: 324). Harp noted the presence of caribou, fox, beaver, migratory fowl and fish bone, in addition to seal, in the middens from Phillip's Garden (Harp 1976:128), and during more recent excavations at the site, Renouf identified caribou as being second in frequency after seal in Feature 2; as well, small amounts of bird and fish bone are being consistently recovered during water screening (Renouf, pers. comm.). It is evident that these species were being exploited by the Middle Dorset population on the Northern Peninsula to some extent. In total, finished tools associated with extractive activities make up 2.77 % of the tool count from Broom Point.

Artifacts generally thought to be associated with butchering and/or processing activities were also recovered from Broom Point, comprising a rather large percentage (61.06 %) of the total tool assemblage. Usually interpreted as cutting and/or scraping implements, these include such artifact classes as the hafted and unhafted bifaces (3.16 % of the tools), the dorsally modified and marginally retouched endscrapers (7.5 % of the tools), concave side-scrapers (0.79 % of the tools), blade endscrapers (0.79 % of the tools), quartz crystal microblades (4.35 % of the tools), chert microblades (23.32 % of the tools) and retouched/utilized flakes (21.15 % of the tools). It should be noted, however, that the chert microblades are likely over-represented in the assemblage as fragments (distal, proximal, medial and proximal - medial) as well as associated blade-like flakes were included in the count, and few of these exhibit any signs of use-wear. It is also probable that a number of the retouched/utilized flakes in the assemblage, and possibly some of the marginally retouched end-scrapers and unhafted bifaces, represent preforms discarded in their early stages of manufacture and not expediency tools. Nevertheless, it is probable, based on the number of bifaces, scrapers and quartz crystal microblades (as well as a few chert microblades) that do exhibit signs of use-wear and/or hafting modifications, that domestic pursuits such as the butchering of animals and the processing of skins or other materials were being carried out at the site.

The most prominent activity engaged in at Broom Point, however, appears to have been the manufacture and maintenance of stone tools, from the initial reduction of the raw material to the final stages of tool production. This is evidenced by the relatively high percentage of endblade and biface preforms in the assemblage (which almost match the counts for their finished counterparts), 2.57 % of the tools for the former and 2.17 % for the latter, in addition to the seemingly inordinate number of tip flute flakes recovered (19.17 % of the tools and tool fragments), the burin-like-tools (1.78 % of the tools), artifacts usually interpreted as engraving implements, the hammerstones (4.74 % of the tools), and the large amount of lithic debris retrieved during excavations.

As has been already indicated, a number of the tools in the assemblage that do not exhibit obvious signs of use-wear (such as some of the microblades) may actually represent the un-utilized end-products of the manufacturing activities. In addition, some of the marginally retouched end-scrapers and unhafted bifaces may also represent unfinished tools, just as some of the retouched/utilized flakes may represent discarded preforms. It should be noted that hammerstones are likely under-represented in the assemblage, as only those specimens with definite signs of utilization (pitting or battering) were collected from the sand and cobble beach. The variety of sizes of hammerstones retrieved (see Chapter 4) no doubt reflect the varying stages of tool manufacture in which they were employed.

As has been previously mentioned, in terms of the total artifact count from Broom Point, debitage comprises 95.15 % of the assemblage, and tools a mere 4.85 %. The presence of primary and secondary decortication flakes amongst the debitage (3.71 % of the total), in addition to cores and core fragments (0.83 % of the debitage), indicates that some primary reduction of lithic material (mainly chert cobbles) was being carried out at the site. Secondary reduction of both chert cobbles and chert obtained from seams in outcrops is evidenced by the presence of secondary flakes (9.49 % of the debitage), block shatter (10.10 % of the debitage) and non-identifiable flake fragments (5.35 % of the debitage), pertaining to both source varieties, in the assemblage. The large number of retouch/resharpening flakes recovered (70.61 % of the debitage) denotes that a good deal of finishing and retouching of tools, and perhaps resharpening, was being carried out at the site as well; resharpening and general tool maintenance activities are difficult to separate from manufacturing ones, as the by-products of both include tip flute flakes and retouch/resharpening flakes. Although Broom Point does not represent an actual quarry site, a variety of chert sources have been documented for the surrounding area and the immediate vicinity of the site (see Chapters 2 and 4). It is likely that raw material was transported to Broom Point from sources close by for the express purpose of reduction (either primary or secondary) and tool manufacture.

Summary of Site Function(s)

Even though there is a relative paucity of formed tools in the assemblage from Broom Point, a variety of artifacts generally associated with a number of activities aside from purely extractive ones are represented. These include activities ranging from hunting (endblades and ground slate lance) to processing (bifaces, scrapers and microblades) to lithic reduction and tool manufacturing (hammerstones, debitage, preforms and tip flute flakes) as well as tool maintenance (reworked endblades and tip flute flakes); activities more in keeping with a living site, however brief, than with a single purpose extractive camp. Aside from the proportionately high percentage of processing tools recovered, domestic pursuits at Broom Point are also evidenced by the presence of one intact hearth feature in Operation 19 (Figure 5), and the number of scattered fires located across the site, in addition to the probable tent ring uncovered near the terrace edge; features that support the interpretation of Broom Point as a small habitation site, the nature and duration of which will be discussed in a later section.

Intra-site Variability

As has been previously mentioned, preliminary investigations at the Broom Point site in 1982 concentrated on Areas 1 and 2 near the terrace edge, while additional excavations in 1984 focused on Area 3, located in the grassy clearing between the embankment and the modern house structure (Figure 3). Unfortunately, precise provenience was not recorded for a great many of the artifacts recovered from Areas 1 and 2, as 1) the majority of this section of the site had been seriously disturbed by the construction of historic buildings and associated activities, and 2) the 1982 investigations were confined to a very short (two-week) field season. Field notes for the 1982 investigations at Broom Point are also missing. However, both debitage and tools from the 1982 excavations were collected and catalogued according to square metre and level, allowing general comparisons to be made with the 1984 data.

First, with regard to the spatial distribution of tool types across the site, and including the material from Area 3, no discrete clustering for any activity (reflected in tool types), other than general lithic reduction, can be seen; a wide variety of tools are fairly evenly and thinly scattered throughout all areas of concentration. The number of different tool types present indicates that a variety of tasks were being carried out in the same areas of the site; apparently separate locations were not required by the prehistoric inhabitants of Broom Point for the execution of different activities. Another explanation for the lack of clustering among tool types is that the "smearing" of artifacts may have taken place within the sandy ancient beach that formed the original surface of the site, caused by the activities of the prehistoric inhabitants during occupation, or perhaps as a result of successive occupations of the site.

Frequencies of tool types are also similar between Areas 1 and 2, and Area 3 (Tables 3 and 4), with a few notable exceptions: more preforms occur in Areas 1 and 2, than in Area 3 (11:2), and more microblade cores and fragments occur in Areas 1 and 2, than in Area 3 (13:4), whereas more bifaces without hafting modifications occur in Area 3, than in Areas 1 and 2 (10:1), as do a great many more tip flute flakes (80:17). The increase in number of tip flute flakes in Area 3 may be connected to the fact that all cultural levels were screened through one-quarter inch mesh during the 1984 excavations at Broom Point, a procedure not employed at the time of the earlier investigations.

Tool material types are only slightly different between Areas, with opaque Cow Head chert (lithic type 1) forming 36.28 %, translucent Cow Head chert (lithic type 2) 17.26 %, grainy grey chert (lithic type 3) 2.21 % and other lithic types 44.25 % of the tools from Areas 1 and 2, and opaque Cow Head chert (lithic type 1) forming 28.21 %, translucent Cow Head chert (lithic type 2) 34.29 %, grainy grey chert (lithic type 3) 9.64 % and other lithic types 27.86 % of the tools from Area 3. The most significant difference in the above discussion is probably the greater percentage of tools made from translucent Cow Head chert in Area 3.

Other noticeable differences exist between Areas 1 and 2, and Area 3, in terms of the amount and types of debitage recovered (Tables 6 and 7), although some of these may not be culturally significant, and again due to the differences in excavation techniques mentioned earlier between the 1982 (Areas 1 and 2) and 1984 (Area 3) investigations. A total of 2504 pieces of lithic debris was collected for the former Areas, and 7414 pieces for the latter Area. In addition, a greater amount of primary lithic reduction appears to have occurred in Area 3, with the presence of 226 primary and secondary decortication flakes and 49 core and core fragments in the assemblage, in comparison to the 102 primary and secondary decortication flakes and 33 core and core fragments collected from Areas 1 and 2. A great deal of tool formation and finishing is also reflected in the debitage assemblage from Area 3, with the recovery of 5604 retouch/resharpening flakes, compared to only 1396 retouch/resharpening flakes collected from Areas 1 and 2, although these flake types in particular would be difficult to retrieve without the use of screens for sifting the cultural material.

The most significant difference between the Areas, however, is reflected in the varying lithic material types present in the debitage assemblages (Figures 6-17; Tables 6 and 7). For Areas 1 and 2, opaque Cow Head chert (lithic type 1) forms 97.76 % of the debitage recovered, while other varieties of lithic types make up a mere 2.24 %; however, in Area 3, opaque Cow Head chert (lithic type 1) forms 56.87 % of the debitage, translucent Cow Head chert (lithic type 2) 25.52 % and other varieties of lithics 7.02 % of the assemblage. Lithic types absent from all debitage assemblages include red-green mottled chert (lithic type 12), dense black chert (lithic type 13), medium-grained quartzite (lithic type 17), nephrite (lithic type 18) and silicified slate (lithic type 19), which only appear in the tool assemblages from Broom Point.

A number of lithic types recorded for the Area 3 debitage are also lacking in the debitage from Areas 1 and 2, including grainy grey chert (lithic type 3; Figures 10 and 11), light grey chert (lithic type 5), red opaque chert (lithic type 7), slate-like chert (lithic type 9) and fine-grained quartzite (lithic type 16). Even with regard to lithic types common to both assemblages, the following observations are of note, indicating more intensive reduction activities were generally being carried out in Area 3, than in Areas 1 and 2: opaque Cow Head chert (lithic type 1) is altogether more dense in Area 3 (Figures 6 and 7), translucent Cow Head chert (lithic type 2) is represented by only a secondary flake from Areas 1 and 2, yet is quite common in Area 3 (Figures 8 and 9), also in accordance with the greater number of tools made from translucent Cow Head chert collected from Area 3, opaque green chert (lithic type 4) is more dense in Area 3 (Figures 12 and 13), mottled grey chert (lithic type

8) is similar in density for both Areas 1 and 2, and Area 3 (Figures 14 and 15), and all of the remaining lithic types are generally more common in Area 3 (Figures 16 and 17).

The absence of certain lithic types and the scarcity of others in the debitage from Areas 1 and 2, compared with the eclectic variety of cherts recovered from Area 3, can be interpreted in two ways: either Areas 1 and 2, and Area 3, represent separate activity areas in which the reduction of at least some different lithic materials took place during a single Middle Dorset occupation of the site, or Areas 1 and 2, and Area 3, represent separate occupations of Middle Dorset populations during which the reduction of different (and some similar) lithic materials took place. If the latter is correct, the relative similarity in the tool material types recovered from both Areas 1 and 2, and Area 3 (with the exception of the translucent Cow Head chert), can be explained by the supposition that tools would probably tend to "travel" after manufacture, while debitage is more likely to remain <u>in situ</u> following reduction.

Other differences also exist between Areas 1 and 2, and Area 3, with respect to structures and features. The only structure identified at Broom Point is represented by a probable tent ring, located in Area 2 of the site near the terrace edge. Debitage in this portion of the site is represented by a very thin scatter (see Figures 6, 8, 10, 12, 14 and 16), perhaps supporting the theory that Area 2 represents a living area. The debitage from adjacent Area 1 contains lithic types similar to those recovered from Area 2 (although occurring in somewhat greater densities). The fact that no structures were uncovered here may indicate that Area 1 represents an associated workshop, although disturbance was particularly heavy in this portion of the site, and the presence of additional tent rings may have been obscured. Artifacts recovered from both Areas 1 and 2 include fairly equal frequencies of various tool types (Table 3) and no clusters of artifacts were noted in association with intact hearths or other features.

An activity area, however, can be identified in Operation 19 of Area 3, represented by a wide range of tool types and "workshop" materials surrounding a formal, intact hearth feature and a lithic cache (Figure 5). No identifiable structures were located in this undisturbed area, which is characterized by a jumble of naturally occurring beach cobbles in a sand matrix. As has been previously mentioned, all types of debitage were recovered from Area 3, including primary and secondary decortication flakes, and cores and core fragments, representing initial reduction of raw material, as well as a great many retouch/resharpening flakes, reflecting the final stages of tool formation and finishing (Table 7). The large number of tip flute flakes (80) recovered from this area, and the number of hammerstones collected (11), support the theory that Area 3 represents an intensive workshop (cf. Table 4). Whether or not Areas 1 and 2 (living area and perhaps associated workshop), and Area 3 (intensive workshop), are components that pertain to the same occupation of Broom Point, or whether they reflect separate occupations of the site, is an issue that will be further discussed in the following section.

Duration of Occupation (Chronological Range)

The nature of the structures and features discovered at Broom Point, and the paucity of the tools in the artifact assemblage, point to a temporary Middle Dorset occupation (or occupations) of the site. The only identifiable structure located during both seasons of excavation is represented by the probable tent ring, which consists of a roughly circular arrangement of large beach cobbles, situated near the terrace edge in Area 2. Tent rings are generally interpreted as the remnants of temporary shelters, indicative of short-term habitation. There exist no surface indicators at Broom Point, such as depressions or vegetational differences, to suggest the presence of more permanent house structures, and neither excavation nor the programme of intensive testing employed at the site succeeded in revealing any traces of more substantial semi-sedentary dwellings, such as the type discovered at the Phillip's Garden site, located farther north on the Northern Peninsula (Figure 1). Permanent/semi-permanent structures are usually the products of a significant investment of labour on the part of the site inhabitants, and may reflect a commitment to the area.

Numerous small, naturally occurring cobbles can be found on the ancient beach surface of the site, as well as a small amount of flat rocks, but other than the one probable tent ring already mentioned, these do not form any significant formations or patterns. It is also unlikely that semi-subterranean house structures once existed at Broom Point and were later dismantled or disturbed without leaving behind some evidence of their existence. For one, the site is small in extent, and excavations in 1984 concentrated on the undisturbed portion of the site without revealing any traces of such structures. In addition, nothing resembling the quantity of flat limestone slabs or large rocks suitable for house construction, such as are found at larger, more permanent sites (as illustrated by Cape Ray or Phillip's Garden) was uncovered at Broom Point.

A lack of substantial midden deposits at Broom Point also indicates a short-term occupation. With reference to the soil profiles recorded during excavations at the site (Figure 4), the cultural level represented by the black humus (level 3) is extremely thin, ranging from 1-5 cm in overall thickness, with measurements usually falling into the lower end of the scale. As has been previously mentioned, level 3 was often difficult to distinguish in the unit walls following excavation, and although indications of more than one black humus were occasionally noted, these "cultural" levels were impossible to follow and did not produce any diagnostic artifacts to confirm their cultural identity. Occupation or occupations at Broom Point were clearly not as intensive as Middle Dorset occupations of other sites in western Newfoundland, with especial reference to the Phillip's Garden site with its rich midden deposits (Harp 1964, 1976; Renouf 1986), and Cape Ray, which like Broom Point lacks faunal remains, but where an occupation layer represented by a very black, sooty, greasy and clayey soil sometimes reached a thickness of more than a foot (Linnamae 1975:33). Hearth features also reflect the temporary nature of the Broom Point site, being few in number and including only one intact example (Figure 21), in addition to a number of scattered remnants represented by soil stains and fire-broken rock, and containing only small amounts of charcoal, many of which are located in undisturbed portions of the site and hence do not merely represent the products of recent (i.e., twentieth century) intervention (Figure 5). Added to this is the small size of the site in general, which again supports a brief occupation(s) of the area.

The temporary nature of the Middle Dorset occupation(s) of Broom Point is further supported by the relative paucity of stone tools (506 in total) recovered from the site (Table 2), which clearly indicate that a lengthy temporal span of occupation was not involved. Despite the wide range of activities that they represent, an average of only 4.25 tools per square metre was recovered during excavations. At Phillip's Garden, Harp noted that the average density of artifacts for the interior of the houses was generally much higher, ranging from 6.47 tools per square metre for a summer dwelling (House 5), to 37.9 tools per square metre (House 4) and 53.5 tools per square metre (House 2) for two of the winter structures (Harp 1976:134).

Notwithstanding the fact that bone and other organic materials did not preserve at the site, certain tool types usually associated with a more permanent habitation site are also absent from the assemblage, including ground slate (only one ground slate lance was recovered), sandstone abraders, and most noticeably, a complete lack of soapstone in the form of cooking vessels, lamps, amulets and fragments. All of the above represent artifacts that one would not expect to find at a short-term encampment, with the assumptions that they would have been 1) too cumbersome to transport during travel (soapstone vessels and abraders). 2) non-essential depending upon season (soapstone lamps), or 3) unlikely to become broken or lost during a temporary occupation, and perhaps representing highly curated items (amulets, ground slate tools). The artifacts, however, occur in semi-permanent sites such as Phillip's Garden and Point Riche on the Northern Peninsula in fairly high frequencies

(Harp 1964; Renouf 1986).

In addition, the relatively few broken tools and tool fragments recovered from Broom Point are also in accordance with a short-term habitation, as are the large number of expediency tools retrieved. Although a high debitage to tool ratio (1:19) exists in the Broom Point assemblage, and a fairly large amount of debitage was recovered from the site (an average of 83.34 pieces of debitage per square metre), the quantity of debitage can be explained by the proximity of the site to a number of chert sources, and by the obvious fact that debitage is quick to produce during lithic reduction and tool manufacture, especially if a number of separate short-term occupations are involved.

With regard to the chronological range of occupation, three radiocarbon dates were obtained from small wood charcoal samples that pertain to the Middle Dorset utilization of Broom Point, one from the 1982 investigations near the terrace edge (1650±90 B.P., Beta-4471), and two from the 1984 excavations in Operation 19 (1420±70 B.P., Beta-11375 and 1370±100 B.P., Beta-11376). An apparent gap of 70 years can be seen to exist between the date recovered from excavations at the terrace edge (Area 2), and the two overlapping dates obtained from Operation 19 (Area 3). As radiocarbon dates are notorious for their inaccuracy, the first step is to determine whether the gap represents a true difference between the dates, or whether the discrepancy is more readily accounted for by statistical error in the dating procedure (Thomas 1979:250). By using the Student T test in comparing the dates and calculating the T ratio, it can be determined that the dates do not represent contemporaneous events, at a level of 0.05 significance, or 95 % certainty.

It must next be determined whether a single, continuous (and thus permanent) Middle Dorset occupation is being dealt with at Broom Point, dating from approximately 1650± 90 B.P. to 1370±100 B.P., or whether the site actually represents two (and quite possibly more) separate, temporary occupations by small Middle Dorset populations, dating approximately 1650±90 B.P. and 1420±70 B.P./1370±100 B.P. As has been already noted, all on-site data from Broom Point, including the paucity of tools in the artifact assemblage and the lack of permanent house structures and features, point to a temporary occupation of the area, thus indicating it is more likely that the different radiocarbon dates from Areas 2 and 3 represent separate, short-term Middle Dorset occupations of Broom Point, probably with seasonal parameters, and not a single, long-term, sedentary occupation. The number of scattered hearths located across the site also point to repeated occupations, and the presence of the lithic caches in Operation 19 and environs may indicate an anticipated return to the area. Most importantly, however, the difference in dates between Area 2 and Area 3 corresponds to the differences already noted in the debitage material types recovered from these Areas, supporting the theory that Areas 2 and 3, at least, reflect separate occupations of Broom Point, and do not merely represent separate activity areas pertaining to the same occupation.

Site Seasonality

The seasonality of the Middle Dorset occupations of Broom Point is difficult to establish with any degree of certainty, again due to the lack of preserved faunal or floral remains from the site. With regard to the on-site data available, it does not appear that occupations were year-round, as the structures and features point to a "non-winter" utilization of the site. The probable tent ring located near the terrace edge, as well as indicating a temporary encampment, also denotes occupation during warm weather conditions. In contrast, the semi-subterranean house structures from Phillip's Garden in Port au Choix indicate an occupation schedule that includes winter; digging the foundations of a house several centimetres below ground surface is one method of retaining heat during cold weather conditions.

Hearth locations can also point to season of occupation, with the presence of open hearths indicating warm weather conditions. While two small charcoal concentrations were located within the probable tent ring structure near the terrace edge (Tuck 1982b), no formal hearth features, fire-broken rock, ash or other soil stains were uncovered. The only formal, intact hearth feature from the site was located in the open in the activity area represented by Operation 19 (Figure 5). A number of additional scattered fires was also found in the undisturbed portions of the site (represented by soil stains, ash, charcoal and fire-broken rock), where there existed no indications of either permanent house structures or temporary tent rings. Other features often associated with winter occupations are also lacking at Broom Point, including large midden deposits, storage boxes and bone pits. Although a "storage box" was tentatively identified within the probable tent ring in Area 2 of the site during the 1982 investigations, "four flat rocks just inside the rock circle suggest some type of storage box, a feature not uncommon at other Middle Dorset sites" (Tuck 1982b:7), the evidence is rather conjectural as no faunal remains were recovered in association, and no soil changes or stains were noted within or surrounding the feature to support this interpretation.

In terms of the artifact assemblage recovered from Broom Point, the absence of soapstone, particularly vessel and lamp fragments, also suggests a "non-winter" occupation(s) of the site. Partial and complete soapstone vessels and lamps, in addition to soapstone fragments, have been recovered in great quantities from such semi-permanent Middle Dorset sites as Phillip's Garden (Harp 1964). Recent investigations at Phillip's Garden have also confirmed the presence of soapstone vessel/lamp fragments at the site, the distribution of which includes the interior of at least one semi-permanent "winter" house structure, that was completely excavated during the 1985 field season (Renouf 1986).

One of the stongest indications for seasonality of the Broom Point site, however, is reflected in, and related to, site function. To reiterate, it appears that the most prominent activity engaged in by the Middle Dorset inhabitants of Broom Point (during both occupations) was the manufacturing of stone tools, from the initial reduction of raw material to the final stages of tool production. It has also been established that the proximity of Broom Point to a number of local chert sources was likely a major attraction to the Middle Dorset population, and that raw material was procured and then transported to the site from sources close by for the purpose of said reduction and tool manufacture. With regard to site seasonality, it is unlikely that such procurement and manufacturing activities would have been carried out during the winter months, when snow cover would have made the lithic sources inaccessible to the site inhabitants. This observation is based on a number of assumptions, that 1) the activities represented at Areas 1 and 2, and Area 3 are not palimpsests and that spatial separation between Areas 1 and 2, and Area 3 reflects separate occupations of Middle Dorset people (as has been suggested), 2) that maintenance and manufacturing activities were the main activities for both occupations (as they appear to have been) and thus the primary determinants of site location and seasonality, and 3) that other activities represented at the site were carried out at the same time as the manufacturing/maintenance pursuits. In addition, the majority of the debitage was recovered in association with open hearths, from areas where no signs of structures were uncovered, thus supporting a "non-winter" utilization of Broom Point.

Environmental Changes in the Study Area

As has been previously mentioned, interpretations regarding specific subsistence activities for the site inhabitants are based on few tangible results. By examining off-site data, however, and in reconstructing optimal utilization of potentially exploitable resources in the Broom Point area, in conjunction with the apparent non-winter utilization of the site that has been so far established, some insights into probable seasonality can be drawn. However, the possibility of environmental change in the study area must first be considered.

Although detailed information is not available regarding the exact nature of the environment in the study area during the time of the MIddle Dorset occupation of Broom Point (approximately 1650-1370 B.P.), some general changes in environmental conditions for northern Newfoundland and southeast Labrador over the past 9000 years can be noted (cf. Macpherson 1981). Both the early and the late Holocene in this region are characterized by a cold and dry climate. Following deglaciation (before 9400 B.P.) the vegetation consisted of low tundra, with a gradual increase in boreal forest trees, temperate trees, birch and shrub vegetation associated with a moist, warming climatic period. This trend reached its maximum warmth about 4000 B.P., followed by a cooling trend, with increasing climatic severity by about 3000 B.P. and a marked climatic deterioration after 2500 B.P. Most noticeable in the pollen record at this time is a vegetational regression after 3000 B.P., with an increase in spruce to the north, a decline in tree birch, as well as a marked decline in total pollen productivity. The coastal waters of Labrador and northern Newfoundland cooled with a continued reduction in ocean surface temperatures, and the chilling effect was (and still is) readily apparent in the persistence of forest tundra in northern coastal locations.

Recent work in northern Newfoundland indicates that fluctuations of temperature have been superimposed on this general cooling trend, and (as has been previously mentioned) intensive work on pollen and macrofossils in sediments covering the last 2500 years from L'Anse aux Meadows suggests that, in general, regional vegetation at 1000 B.P. was little different from that of today, although an increase in the rate of peat accumulation at this time may reflect somewhat milder conditions than either the immediately preceding or following centuries (cf. Macpherson 1981). The assumption will thus be made in the following discussion of resource scheduling that species present in the study area today would have also been available in similar numbers and distributions in the area during the Middle Dorset occupation of Broom Point, possessing the same general behavioural characteristics and migratory traits. If anything, species present in the study area may have occurred in greater numbers at the time of Middle Dorset occupation, as this represents a period prior to European exploitation of the region (and the depletion of certain resources), and at the same time in the middle stages only of the regional climatic deterioration.

Discussion

Winters on the Northern Peninsula of Newfoundland are generally long and cold, with continuous snow cover lasting up to six months (Damman 1983), and with sea ice present from January until at least March (Gutsell 1949). If Broom Point does indeed represent a non-winter occupation(s), then November to at least mid-April can be discounted for site habitation on account of extreme cold weather conditions during these months, in addition to uninterrupted snow cover. The possible seasons of occupation(s) thus include, at most, the months from late April to late October, that is, late spring, summer and early fall.

Potentially available resources for the Broom Point area during these seasons include a wide range of marine, riverine, terrestrial, avian and edible plant species (Table 1). With regard to marine mammals, harbour seal are available throughout late spring, summer and early fall, and indeed the entire year, with clumping occurring from late May to late October, when the seal congregate close to shore and haul out on sand bars and rocky outcrops to bask in the sun (Boulva and McLaren 1979). Grey seal are also believed to have once entered the area as part of their summer migrations to northern feeding grounds, and would have been available from June to September, also congregating on the shore in warm weather (Mansfield 1967). Harp seal are also known to pass by the site on their northern spring migration, although they would have been available to the site inhabitants only until the middle of May at the latest (Mansfield 1967; Bowen 1985). Occasional visitors to the area also include hooded seal in September, during their southward migration (Mansfield 1967), and ringed and bearded seal during May and early June, arriving in the area via ice floes from the north (Mansfield 1967). Prehistorically, walrus may have been available year-round, with clumping occurring from May to early June when the animals haul out to breed on the land, or on available ice (Mansfield 1959, 1967). Small whales are also available in the study area year-round, and could have been easily driven ashore by a few men in small boats (Templeman 1966).

With regard to piscine resources, a variety of ocean fish migrate into the area during the summer months, and most importantly, are available near river mouths and in the shallows close to shore. These include atlantic cod, available from late May to late September, halibut and mackeral, available from June to September, winter flounder, available from mid-May to possibly mid-June, herring, available from early May to mid-June, bluefin tuna, occasionally available from June to September, smelt, which run from May to early June and again in October, and capelin, which spawn close to shore near the end of May, remaining in the area until September (Templeman 1966). A number of anadromous fish are also available for short periods of time in rivers such as Western Brook, including salmon, which run from late September through November (Scott and Crossman 1973), brook trout, which run from May through July (Scott and Crossman 1964), and arctic char, which run from June through September (Templeman 1966). A variety of freshwater fish can also be found year-round in nearby streams, rivers and lakes, including eel, mummichog, tomcod, varieties of stickleback, american sandlance, windowpane, alewife, american shad, banded killifish, sea lamprey and atlantic sturgeon, in addition to the anadromous species mentioned above (Scott and Crossman 1964).

Small terrestrial mammals available in the study area year-round include beaver, muskrat, red fox, lynx, arctic hare, weasel, marten, otter and meadow vole (Dodds 1983). The Newfoundland wolf, now extinct, would also have been present year-round (Cameron 1958), and the arctic fox may have represented an occasional visitor to the area (Dodds 1983). Larger land mammals, including black bear, polar bear and caribou, would also have been available and were probably of significant economic importance to prehistoric populations. Black bear are available from late March until hibernation in late November, with clumping occurring at rivers concurrent with the salmon runs (Northcott 1974). Polar bear, however, represent occasional visitors to the study area only, appearing from March to late May on ice floes (Cameron 1958). Caribou, once more plentiful than today, are available from early April to early November in the nearby mountains, with increased density of numbers occurring during spring and fall migrations (early April to late May, and mid-October to early November), and perhaps during the summer months (July and August), when they may have travelled to coastal regions to escape flies (Cameron 1958; Bergerud n.d.).

With regard to avifauna, a number of species of potential economic importance are present year-round, including ptarmigan, loons, gulls, the common eider, black duck, bald eagle, and oldsquaw, with the latter species only occasionally present in the summer months. Canada goose, ringed-neck duck, green-winged teal and red-breasted merganser represent migratory species available from March through November, which occasionally winter over. The common and arctic tern are available from May to about September, the wood duck from September on to November, and a number of species are seasonal in the winter months, and thus not pertinent to the present discussion (Threlfall 1983; Tuck 1967). Various berries and edible plants are also present in the study area, generally ripening from midsummer to early autumn, and including chuckley pear, wild strawberry, pin cherry, chokecherry, bakeapple, raspberry, dewberry, crackerberry, blueberry, marshberry, partridge berry and crowberry (Scott 1975).

In examining the resources available in the Broom Point area from late April to late October, it becomes apparent that certain species were probably of greater importance to the Middle Dorset inhabitants of Broom Point than others, at least in terms of edible meat weight. However, economic importance can also be calculated according to other attributes, including nonfood yields (fur, hides, feathers, bone, teeth, antler and sinew), fat content, nutritional needs (including vitamin content--not necessarily a conscious decision) and variety in diet, in addition to a host of unknown cultural determinants. The general abundance of a specific resource, the density of individuals, aggregation size and mobility are also factors for consideration (Jochim 1977), in addition to the ability of the population to extract the various resources from the environment;

> The environment imposes certain constraints and offers certain opportunities: which options are taken up and how is determined by the interplay of a very large number of forces, which include psychic, social (and therefore historical) as well as economic or technological factors (Clark 1975:11).

This thesis will not attempt to quantify attributes of various resources, or apply models of hunter-gatherer economic behaviour and resource scheduling directly to Broom Point, partly due to the lack of modern management studies, and detailed information regarding species behaviour, available for the study area (to date), and partly because the undertaking of such an endeavor is beyond the scope of this dissertation. However, some conjectural theorizing of relative resource importance, possible strategies of exploitation, and the determination of more specific site seasonality can be ventured, based on the tentative periods of site occupation already established.

Out of the resource list provided for the study area for the period from late April to late October, marine mammals probably represent the most economically important resource that would have been available to the Middle Dorset inhabitants of Broom Point, providing considerable meat weight per animal, including a high vitamin count if eaten raw (Yesner 1980:733), as well as skins, fat content and additional non-food yields. As has been previously mentioned, the assumption that marine mammals were utilized by the Middle Dorset inhabitants of Broom Point is supported by the presence of the harpoon endblades in the artifact assemblage, and the coastal location of the site. The harbour and grey seal represent the most likely species exploited, due to the fact that their peak times of availability occur well within the limits of the possible seasons of site utilization, that is, late May to late October for the harbour seal, and June to September for the grey seal. Both species would have been easily exploited during these periods of "clumping," either as they rested in herds on the beaches or rocky promontories, using harpoons or clubs, or else harpooned in more solitary numbers close to shore.

The harp seal is a less likely candidate for exploitation and dependence during this time period, being potentially available to the inhabitants for only a few weeks in late April (to mid-May at the latest). It is also possible that the harp seal were not readily accessible; the Broom Point headland is small and does not extend far out into the Gulf (prehistorically, the promontories would have been partially under water), thus harp seal may not have passed close by the site during their spring migration. Nearby Cow Head and the more distant Point Riche peninsula (Figure 1) would provide better locations for harp seal exploitation, representing large projecting headlands. Moreover, no indications of occupation during cold weather conditions exist for Broom Point, and it is unlikely that the site was utilized prior to spring thaw, before which the lithic sources in the area would have been inaccessible due to snow cover. It is also unlikely that Middle Dorset populations would journey to Broom Point prior to, or during, the period of the spring harp seal migration (late April to mid-May), as snow cover and receding ice (which the harp seal follow north) would prove discouraging factors for travel. It seems more probable that populations would remain in winter base camps until after the spring harp seal migration, indeed, such gathering site/base camps are thought to have been optimally located to take advantage of late winter-early spring harp seal migrations (Pastore 1982).

Ringed and bearded seal were probably not heavily exploited by the Broom Point inhabitants, as both species represent only occasional visitors to the study area (and thus unpredictable resources), in the late winter and early spring, although it is possible that they existed in greater, more predictable numbers in the area prehistorically. Hooded seal also represent unlikely candidates for exploitation, as they breed farther out to sea than the harp, and rarely come close to shore during their migrations. If indeed walrus were once present in the study area year-round, they would represent an additional candidate for exploitation, although their peak time of availability occurs at the beginning of the limits of possible site utilization, that is, from May to early June. However, walrus would also "clump" during the summer, being gregarious animals and like the harbour seal often hauling out on beaches to bask in the sun. As well, walrus were likely valued resources, providing ivory in the form of tusks, in addition to food and other nonfood yields, and could have been easily taken either as solitary animals in open water, or when congregated in herds on land, using harpoons, lances or perhaps clubs. Small whales are less likely to have been relied upon by the Middle Dorset inhabitants of Broom Point, representing a less predictable resource, even though they occur in small herds off the coast and could have been occasionally driven ashore.

With regard to other marine resources, a number of species of ocean fish also represent potentially exploitable, predictable resources, occurring in great numbers close to shore during the summer months. In particular, atlantic cod migrate inshore in large schools, from late May to late September, and may have been exploited using lances or perhaps harpoons and leisters (as yet there is no evidence for the use of nets or lines among the Middle Dorset in Newfoundland). Other species of ocean fish occur in fewer numbers, including halibut, mackeral and winter flounder from mid-May to September, and may occasionally have been exploited. Smelt and capelin appear in great numbers during spawning, for a short time only, in the late spring (and again in October for the smelt), but are also available close to shore throughout the summer.

A number of anadromous species of fish may also have been exploited, particularly the brook trout and arctic char, which both appear in great numbers for a short time in the summer. Atlantic salmon runs occur for only a few weeks sometime in October or November, at the end of the limits of possible utilization of Broom Point, and were probably not relied upon by the site inhabitants. It is not known whether the Middle Dorset in Newfoundland exploited salmon runs intensively, with a mind to storage, as few bones have been identified in the faunal assemblages, and few sites reported from the immediate vicinity of good salmon rivers. Fresh-water fish, and a variety of easily accessible inshore shellfish, probably provided predictable, but not heavily exploited, food resources as well.

Although marine resources probably provided the most substantial contribution to the economy of the site inhabitants, less than a kilometre inland from Broom Point today there exists suitable habitat for a number of terrestrial, avian and plant resources. With regard to the small terrestrial mammals in the study area, the most important were probably the beaver, arctic hare and perhaps the Newfoundland wolf. The beaver were likely sought after for their teeth, fur and meat (Cameron 1958), and would have been present in fair densities in the marsh and pond habitat that surrounds the nearby Western Brook River. Arctic hare represent a fairly large-sized, gregarious species that once inhabited all areas of low altitudes in the study area, including the coast, in great numbers (Bergerud 1967). They were likely exploited by the Middle Dorset inhabitants, but not to any great extent as they are lean with little fat and do not aggregate predictably in large groups. The Newfoundland wolf may also have been hunted, perhaps representing a prestige animal to the Middle Dorset in Newfoundland, being one of only a few large predators on the Island. Other small, fur-bearing mammals (including the lynx) may have been exploited as well, although they represent solitary animals, generally occurring in low densities, and therefore were probably not depended upon to any degree.

Of the large land mammals present in the study area, black bear and caribou were probably the most important, with polar bear representing an occasional late winter - early spring visitor to the region, and thus an unpredictable resource. Black bear are present throughout the late spring, summer and fall, with "clumping" occurring concurrent with the salmon runs, and with bears also congregating in fair numbers near berry patches in the late summer and early fall. Black bear may have represented prestige animals as well, also sought after for their meat, hide, fat content and possibly teeth. Caribou were undoubtedly important to Middle Dorset populations in Newfoundland in general, providing meat, hide, fat content, antler, bone and sinew, although it is uncertain whether they were exploited from the Broom Point site. If scattered caribou populations did migrate from the mountains to the coast in the summer, as has been suggested, then the animals would have been easily accessible to the inhabitants of Broom Point, and if not, it is still possible that the caribou were hunted from satellite camps in the nearby mountains.

However, it is unlikely that caribou were hunted from Broom Point during their spring and fall migrations, as their migration dates overlap with the limits of the possible period of utilization of the site. In addition, it has been documented ethnographically that caribou are generally not widely hunted during their spring migrations, as at this time the animals are lean and their hides are in poor condition, with the period of real usefulness occurring in the fall, when back fat has formed and the new "fur" is at its best (Jochim 1977). Furthermore, if aggregations of caribou were being exploited by Middle Dorset on the Northern Peninsula in the fall, it is more likely that the caribou would have been hunted from satellite camps in the mountains or at river crossings that were located close by and connected to winter base camps (so that transport of the resource and perhaps preparation for storage would require minimal expenditure of energy), and not from Broom Point, which represents a seasonal site that was probably occupied only until late October at the most. Where the Broom Point Middle Dorset departed to in the fall, and probable settlement-subsistence patterns for the Middle Dorset along the west coast of the Northern Peninsula in general, are subjects that will be addressed in the next chapter.

Other potential resources that were likely exploited by the Middle Dorset inhabitants of Broom Point are represented by a variety of sea and shore birds, and migratory fowl. The most important of these were probably ptarmigan, available year-round in the mountains, as well as the lower altitudes near the coast, the loon, available year-round in nearby ponds and lakes, various migratory geese and ducks, available in the marsh and pond habitat near the site and along the coast in the spring, summer and fall, and various sea birds such as terns, available throughout the summer, and gulls, available at the coast year-round. With reference to migratory fowl, important periods of aggregation and vulnerability (and thus easy accessibility) probably occurred during nesting and moulting, although documentation regarding specific times for these events is lacking in the present literature. Although probably not relied upon heavily, birds would have provided a readily available food source and would have also furnished eggs, and nonfood yields such as feathers and hollow bones. The bald eagle in particular may have represented a prestige resource to Middle Dorset populations.

Lastly, it is likely that various edible plants and berries were also exploited by the Middle Dorset inhabitants of Broom Point, being accessible at the coast and in the nearby marshes, from midsummer to early fall. Although the Middle Dorset in Newfoundland were likely in no way dependent upon these resources for food, plants and berries were probably of greater importance to the Middle Dorset diet than is usually acknowledged, fulfilling vital nutritional requirements, and perhaps medicinal ones as well.

The seasonality of the Broom Point site has already been suggested as non-winter, leaving late spring, summer and early fall (late April to late October) as possible times for occupation(s). With reference to the above discussion, seasonality can be further narrowed down, perhaps, to the time between the end of the spring harp seal migration, and the beginning of the fall caribou migration, that is, from approximately late May to approximately mid-October. In terms of the most optimal time for site occupation, however, the summer (June, July and August) represents the period when the greatest number of "economically" important, potentially exploitable resources clump in space and overlap in time in the Broom Point area, in particular the harbour seal, migratory grey seal, walrus, atlantic cod (and other inshore ocean fish), anadromous brook trout and arctic char, black bear, summer caribou, migratory fowl and edible plants and berries, in addition to a number of year-round resources (Table 1).

It should be noted that none of the above resources aggregate in great numbers (in contrast to migratory harp seal, fall and spring caribou herds, and perhaps anadromous atlantic salmon), and all are available throughout the Northern Peninsula during the summer months, being fairly evenly dispersed along the west coast, with the obvious exception of choice locales existing in certain areas. It should also be noted that the seasonality may not have been the same for the separate short-term Middle Dorset occupations of Broom Point, and although all indications point to a non-winter utilization of the site, occupations may have taken place at slightly different times in the late spring, summer or early fall.

Summary of the Broom Point Site

The Broom Point site (DlBl-1) has been interpreted as representing a small seasonal Middle Dorset site, with evidence of at least two separate short-term occupations by these Late Palaeo-Eskimo people. The most prominent activity represented at the site relates to the manufacture and maintenance of stone tools, from the primary reduction of a variety of local cherts to the final stages of tool production, the latter being reflected in a large amount of retouch/resharpening debitage as well as various tool preforms collected from the site. Additional activities reflected in the artifact assemblage relate to the hunting of marine mammals and other general extractive and processing pursuits.

Site seasonality has been suggested as non-winter, based on the presence of a tent ring and a number of open hearths and scattered fires uncovered at Broom Point, in addition to the absence of a number of structures, features and artifact types generally associated with semi-permanent winter sites in the study area. Through the examination of current resource scheduling in the Broom Point area, it has been speculated that the time of the Middle Dorset occupation or occupations can perhaps be further narrowed down to the summer, when the greatest number of potentially exploitable resources overlap in time and space in this region of western Newfoundland.

Chapter 6

SUMMARY AND SPECULATIONS

The following sections are concerned primarily with determining the significance of the Broom Point site in light of data currently available regarding Middle Dorset settlement-subsistence along the west coast of Newfoundland's Great Northern Peninsula. This involves an examination of other contemporaneous (or what are thought to represent contemporaneous) Middle Dorset sites recorded to date for the study area, as well as a brief summation of the more prevalent models in the literature that pertain to northern coastal hunter-gatherer behaviour. An attempt is then made to establish probable relationships between Broom Point and the other known Middle Dorset sites discussed, and three alternative hypotheses are presented that elucidate the role the Broom Point site might have played in Middle Dorset settlement-subsistence patterns in this particular northern coastal environment.

Summary of Middle Dorset sites from the West Coast of the Northern Peninsula

Despite the attention given by researchers to the west coast of the Northern Peninsula over the past five decades, the data base concerning sites of Middle Dorset affiliation in this region remains small. Although a fair number of sites have been recorded for the area, few intensive investigations of single sites or networks of associated sites have been carried out, with the exception of the Port au Choix and the Broom Point areas. Other major investigations undertaken in the study area have concentrated on the excavation of single component Early Palaeo-Eskimo sites (Factory Cove), Maritime Archaic Indian sites (the Maritime Archaic cemetery at Port au Choix), or multi-component sites with little evidence of Middle Dorset material (the Cow Head site and Norris Point). The following section represents a brief description of Middle Dorset sites recorded to date for the study area.

Port au Choix and Point Riche Peninsulas

Phillip's Garden

The Phillip's Garden site, formerly Harp's Port au Choix-2, is located on the north shore of the Point Riche peninsula, approximately 1.3 kilometres west of the modern community of Port au Choix (Figure 1). Perhaps the largest Middle Dorset site known to exist in Newfoundland and Labrador, Phillip's Garden has been the focus of an impressive number of investigations, the most recent and intensive of which is currently being carried out by Dr. M.A.P. Renouf of the Memorial University of Newfoundland, in connection with a programme of research initiated by Parks Canada, Atlantic Region.

The site is prolific and extensive, covering a minimum of 20,000 m^2 in area (Renouf 1985c), and consisting of numerous and often overlapping features (Renouf 1985a,b). Situated in an open meadow surrounded by tuckamore on its east, south and west sides, and opening onto beach front at its northern end, Phillip's Garden contains at least 48 shallow house depressions that are spread over the upper two of three raised terraces (Renouf 1985c), in addition to substantial hearths and associated middens containing masses of bone debris and artifacts (Harp 1964), and "although a large portion of the site has been disturbed, a significant part, approximately half, remains intact" (Renouf 1985b:42). Radiocarbon dates indicate that Middle Dorset occupation of the site took place from approximately 1740 B.P. to 1295 B.P. (Renouf 1985c), and the site appears to have been semi-permanent, utilized throughout most if not all of the year, based on the presence of both summer and winter house forms (Harp 1976). As well, "the huge quantities of bone debris in the associated middens strongly indicate prolonged or repeated occupation of the winter houses" (Harp 1976:134).

Harp reported that only one "summer" house was excavated at Phillip's Garden (House 5), represented by a shallow, oval depression, measuring approximately 3.1 by 5.5 metres, which exhibited no exposed rocks on its perimeter and no enrichment of vegetation on its surface. During excavation, the depression was noted to contain noticeably fewer rocks than the surrounding area, and "there was no prominent peripheral ring of stones, no internal hearth, or other noteworthy features, and there was a relatively thin distribution of artifacts throughout" (Harp 1976:130), suggesting a brief occupation. Harp also noted that "there may have been other dwellings of this apparently temporary character in Port au Choix 2, but all others in the excavated sample appeared to be more substantial winter houses" (Harp 1976:130).

In his discussion of "winter" houses, Harp described a typical example (House 2) as being roughly square in overall form, measuring 4.6 by 4.6 metres, with the main floor area relatively clear of limestone beach rock. Remnants of walls were represented by slabs of limestone beach rock located at the periphery of the living space, which rose approximately 30 to 45 centimetres above the general floor level. An elongated combination of stone-lined pits, averaging depths of 30 centimetres below floor level, were noted to run along the central front-to-rear axis of the structure, and widespread evidence of blubber lamps was recorded in the house interior, along with several concentrations of wood charcoal, probably representing internal hearths. At the rear of the structure (the house was thought to have faced the beach, i.e., north), a raised semicircular, rock-free area was interpreted as a bed platform (Harp 1976).

> In architectural terms, this house, and others like it in Port aux Choix 2, bespeak many man-hours of labor spent in the careful con-

> struction of a culturally standardized design. All known examples of this type are semisubterranean and have central hearth areas, precisely laid-up side walls, suggestions of rear bed platforms and interior storage pits grouped around the central axis (Harp 1976:132).

A full range of Middle Dorset tool types is represented in the substantial lithic artifact assemblages so far retrieved from Phillip's Garden, in addition to a large amount of debitage, mostly secondary reduction material. Tool types include triangular endblades, bifaces (including multiple side-notched specimens), preforms, endscrapers, concave side-scrapers, microblades and microblade cores, burin-like-tools, tip flute flakes and hammerstones, in addition to a great many ground slate tools (including two forms of flat, bevelled-edge "scrapers"), sandstone abraders and soapstone vessel/lamp fragments (Harp 1964; Renouf, pers. comm.). As well, "excellent preservation of bone, horn, and ivory due to the presence of limestone bedrock and alkaline soils" (Harp 1976:120), has allowed the recovery of a wide variety of organic artifacts from Phillip's Garden, including harpoon heads, lances, barbed points, "sled runners," tool hafts, needles, incised art work and unidentifiable artifacts of bone (including whale bone) and ivory, in addition to masses of food bone collected from the refuse middens and bone pits (Harp 1964; Renouf 1986).

Species identified in faunal assemblages from Phillip's Garden to date include a variety of seal, with an emphasis on harp seal, and including many immature specimens, as well as traces of caribou, red fox, beaver, migratory fowl and fish (Harp 1976). Harp has postulated that Phillip's Garden was occupied by Middle Dorset populations primarily for the exploitation of harp seal in the spring;

> Given the prevalence of westerly winds in this area, the floes tend to concentrate and jam into this section of the coast, and to the present day such projecting headlands as Cape Ferolle and Cape Riche, where Port aux Choix 2 is situated, are considered to be among the best spring hunting places on the west coast of Newfoundland. The hunting can be done from small boats around the fringes of the pack, or afoot on land-fast ice (Harp 1976:128).

However great in numbers, harp seal are available for only a brief period of time, and although they may have proved a primary attraction, it is more probable that it was a combination of a number of marine and other potentially exploitable resources overlapping at this northern coastal location, and not the harp seal alone, that enabled the Middle Dorset population of Phillip's Garden to remain semi-sedentary; "the rich food resources at Port aux Choix 2 supported relatively large numbers of people throughout a long period of time and fostered the development there of a quasi-permanent base settlement" (Harp 1976:137), from which the Middle Dorset inhabitants "could easily sortie inland for caribou, as well as along the coast to the main salmon rivers during the summer" (Harp 1976:132).

Point Riche

A recent, intensive survey programme involving both coastal and non-coastal areas of the Point Riche and Port au Choix peninsulas succeeded in locating many small Palaeo-Eskimo sites, in addition to one previously undiscovered and undisturbed, large Dorset settlement, similar to Phillip's Garden (Renouf 1985c, 1986). Approximately 100 metres south of the Point Riche lighthouse at the southwest tip of the Point Riche peninsula, not far from the present beach, a number of shallow house depressions were located in an exposed and slightly elevated grassy area. Although 58 such depressions were noted and sketched, not all of these are believed to be related to prehistoric occupation; some appear to be the result of historic disturbance, while others may be natural, resulting from drainage of the limestone bedrock (Renouf 1985a,b). Initial testing in 1984 revealed that, whether natural or cultural in origin, a number of the depressions contained substantial amounts of faunal material and Middle Dorset artifacts (Renouf 1985b).

Further testing and the excavation of a single shallow depression in 1985 confirmed the Middle Dorset affiliation of the site, producing a wide range of both lithic and organic artifacts including triangular endblades, bifaces, endscrapers, microblades, burin-like-tools, tip flute flakes, ground slate tools, sandstone abraders and soapstone vessel fragments, in addition to preserved bone harpoon heads, barbed points and "sled runners" (Renouf 1986). The Point Riche site is significant because of its extent (covering a minimum of 1500 m^2), the existence of probable house structures (at least twelve of the depressions are thought to be house depressions), the rich faunal and artifactual remains, and due to the fact that the area remains relatively undisturbed. In addition, the site overlaps temporally with Phillip's Garden, located just to the east (Renouf 1985b, 1986).

Analysis of faunal material from Point Riche will likely provide the key to establishing site function, seasonality and its connection to other sites in the region, particularly Phillip's Garden. It has been noted, however, that the extremely exposed location of the site "means that the place is always windy and often cooler than other areas on the peninsula, thus keeping summer flies to a minimum" (Renouf 1985b:18). As well, the location would have provided the site inhabitants with an optimal vantage point for observing sea mammals in Ingornachoix Bay (Renouf 1985b).

Other Middle Dorset Sites in the Port au Choix Area

A number of smaller Middle Dorset sites have also been located on the Point Riche and Port au Choix peninsulas, some recorded as a result of the recent survey programme mentioned earlier, and others discovered during previous investigations in the area; all are probably functionally and seasonally complementary to Phillip's Garden (Renouf

1985c). The orientation of these sites points to a primarily coastal focus of occupation; aside from cave burials, only one activity area was located inland, high on the raised beaches behind Phillip's Garden (Renouf 1985a,b,c). Aside from isolated finds, material of unknown cultural affiliation and potential cave burial sites, the following Middle Dorset sites have been recorded for the area:

Hill East of Phillip's Garden

A small site of probable Palaeo-Eskimo affiliation was located on a bluff not far to the southeast of Phillip's Garden during the 1984 survey. Three concentrations of cultural material were delineated, consisting mainly of fine-grained grey chert and quartz crystal, and the site likely reflects short-term activities (Renouf 1985b).

Phillip's Garden West

The presence of a small Palaeo-Eskimo site, located on the middle terrace just east of Black Point on the Point Riche peninsula, was initially reported by Fitzhugh in 1982, to be later re-located by Renouf during the 1984 survey. Cultural material was noted to extend approximately 50 metres east-west, and 10 metres north-south, and the locality is believed to represent a small single component, possibly special purpose site, that may be of Groswater rather than Middle Dorset affiliation (Renouf 1985b, pers. comm.).

Lighthouse Site

A small amount of Palaeo-Eskimo cultural material was also found exposed in the immediate vicinity of the Point Riche lighthouse, probably of Middle Dorset affiliation (Renouf 1985b).

Crow Head Cave

Human remains as well as a number of carved and incised bone and ivory objects, thought to be part of a Middle Dorset burial, were reportedly removed from a fissure in the north-east cliff face of Crow Head by a local resident. Crow Head represents the highest point of the interior cliffs of the Point Riche peninsula, and constitutes a landmark which can be seen from most areas on the peninsula. Unfortunately, the collection has disappeared, and for some unknown reason, explosives have been used since to fill the cave with rubble. The cultural affinity of the material had been tentatively identified as Dorset by Tuck, who once viewed the remains and associated artifacts. Investigations during the 1984 season located a single microblade core in the interior of the cave, and the possibility exists that additional cultural material may be buried underneath the rubble (Renouf 1985b).

Harp's Port au Choix-6

A small site was located by Harp on the isthmus connecting the Point Riche peninsula to the mainland, consisting of

Middle Dorset cultural material as well as faunal remains extending over a 30.5 metre area of the terrace front (Harp 1964). The site was re-located by Renouf during the 1984 survey (Renouf 1986).

Gargamelle Cave

A number of Middle Dorset burials, similar to that described for Crow Head Cave, were reported by Harp to have been removed from Gargamelle Cave (Harp and Hughes 1968). Unfortunately, a Palaeo-Eskimo burial has yet to be professionally excavated in Newfoundland, and "as a result very little is known about the nature of the interments, the number of individuals buried, and the association of particular artefacts with individual burials, and by default there has been undue emphasis placed on Maritime Archaic burial ceremonialism" (Renouf 1985b:24).

Lab Site

At the southwest corner of the Back Arm, on the secondary road which runs along its southern perimeter, a very small amount of probable Middle Dorset material (including flakes, a ground slate fragment and a chert core fragment) was discovered in the backdirt of modern construction activities. It is likely that not much of the site remains (Renouf 1985b).

Northcott-Rumbolt Site

Two sites, Harp's Port au Choix-5 (initially reported by Wintemberg) and Port au Choix-7, are now believed to represent separate loci of a single site (Renouf 1985a,b,c). Port au Choix-5 (Northcott property) is located on the north side of the isthmus that connects the Point Riche and the Port au Choix peninsulas, overlooking Port au Choix Cove, while Port au Choix-7 (Rumbolt property) is situated approximately 100 metres south of the first locus, at a slightly higher elevation. The loci represent a multi-component Palaeo-Eskimo site, with apparent spatial separation of cultural material, covering an area of at least half an acre (much of which has been built on and disturbed). At least three separate Groswater and one Middle Dorset component have been identified (Renouf 1985b,c).

Harp's Port au Choix-4

At the northeast end of the Port au Choix peninsula, at the base of the first major bluff behind the beach, a "Beothuk Indian burial" in addition to a number of probable Dorset artifacts were reportedly retrieved prior to Harp's investigations (Harp 1964:27). Howley originally described the lithic artifacts, which included probable burin-like-tools, "spearheads," ground slate, and "chert arrowheads of the stemless hollowed base pattern," in his treatise on the Beothuk, and expressed a "strong suspicion that all these implements, etc., from this locality, may possibly be of Eskimo and not of Beothuck manufacture" (Howley 1915:330).

Discussion

Although a number of quartz crystal localities were noted as a result of the 1984 survey of the peninsulas (Renouf 1985b), no chert sources have been documented for the Port au Choix area to date. This may be explained by the fact that the geological sequence that comprises the Port au Choix peninsula and surrounding area consists of the upper part of the Lower Ordivician St. George Group and the basal part of the Middle Ordivician Table Head Group; a sequence of carbonates deposited before and during the foundering of the Cambro-Ordivician platform, characterized in this specific region by virtually flat-lying rocks, and apparently containing no cherts (James and Stevens 1982).

As Renouf has mentioned, it is unlikely that Middle Dorset populations would have existed on the Point Riche and Port au Choix peninsulas in isolation; "rather, it is more likely that the peninsulas were used along with the coastal and interior regions of the mainland northwest coast" (Renouf 1985a:7). As chert sources would have been readily accessible at other locations on the Northern Peninsula, particularly from the numerous outcrops and beaches in the Cow Head - Broom Point region of the west coast, raw material could have been easily procured during the course of seasonal excursions.

Keppel Island

What appears to have represented a sizable Dorset occupation was discovered by Wintemberg at Codtail Point on the eastern end of Keppel Island (Figure 1), situated in the mouth of Hawke's Bay, approximately 1.3 kilometres south of Port Saunders, and 15.5 kilometres south of the Point Riche lighthouse. A number of possible house remains were located scattered in a triangular area approximately 213.4 metres long east-west and 91.5 metres wide north-south. These included half a dozen small, low circular rock piles, approximately 1.8 metres each in diameter, found to contain Palaeo-Eskimo cultural material upon removal of the rocks, at depths of about 20.3 cm below ground suface, "probably house ruins," in addition to a few small circular depressions, approximately 2.4 metres in diameter and 30.5 cm deep, possibly representing the remains of other houses (Wintemberg 1939:86). Wintemberg also noted the presence of a long, straight row of boulders (25.4-35.6 cm in diameter), extending a few hundred metres in an east-west direction on the north side of the point, about 9 metres from shore; these he termed nāngissat, or "hopping stones," thought to be used prehistorically in the hunting of marine mammals (Wintemberg 1939:86). A good deal of faunal material was retrieved and tentatively identified as including caribou, beaver, bear, seal and bird, and cultural material appears to have been of Middle Dorset affiliation, including triangular endblades, bifaces (including a multi-notched specimen), endscrapers, soapstone vessel fragments, as well as preserved bone and ivory harpoon heads and unidentifiable bone objects (Wintemberg 1939:Plate VI, Figure 2, #s 10, 15, 27 and 40; 1940: Plate XVI, Figure 2, #s 1, 4, 7 to 10).

Although Harp revisited the site, he was unable to relocate the structures described by Wintemberg, "none of these was evident at the time of my visit, but the preceding twenty years may have seen considerable change in the topography of the point, exposed as it is to ice-action in the mouth of the bay" (Harp 1964:30). The entire point is apparently formed of gravel and has a low elevation. Little, if any, soil cover exists, and cultural material was found by Harp only in the uppermost centimetres of the gravel (Harp 1964). It is quite possible that the site no longer exists, having been destroyed through natural erosion.

Bellburn's

A probable Middle Dorset site was discovered as a result of road construction in Bellburn's in 1929 (Figure 1). Wintemberg reported that cultural material covered an area approximately 61 metres by 15 metres, atop some limestone cliffs, with the majority of the site situated in a garden which, unfortunately, was in crop at the time of his visit. In addition to "about fifteen chipped stone arrow points" that were unearthed by workmen (Wintemberg 1939:87), artifacts collected included probable Middle Dorset endscrapers and concave sidescrapers (Wintemberg 1939:Plate VI, Figure 2, #s 31, 33 and 36), as well as a hammerstone (Wintemberg 1940:

Plate XV, Figure 2, # 3) and a soapstone pot (Wintemberg 1939:87).

Daniels Harbour

A small possibly Middle Dorset site was located by Wintemberg at Daniels Harbour (Figure 1) where a small number of chert flakes and artifacts were collected. It was noted that the majority of the site appeared to be covered by modern buildings (Wintemberg 1939).

Portland Creek

A small Middle Dorset site, approximately 43 metres by 15 metres in extent, was located by Wintemberg close to a rocky bluff on the north side of the entrance to Portland Creek (Figure 1). Natural erosion (winds had apparently removed a good deal of the sand cover) and the presence of a trail across it had seriously disturbed the site, and "all the bone artifacts, if there ever were any, had completely disappeared" (Wintemberg 1939:87). Middle Dorset artifacts retrieved included triangular endblades (Wintemberg 1939: Plate VI, Figure 2, #s 5 to 9), asymmetric bifaces (Wintemberg 1939:Plate VI, Figure 2, #s 19 and 20), multiple side-notched bifaces (Wintemberg 1939:Plate VI, Figure 2, #s 13 and 14), as well as endscrapers (Wintemberg 1939:Plate VI, Figure 2, #s 24, 28, 29 and 37) and microblades (Wintemberg 1939:Plate VI, Figure 2, #s 1 and 2), ground slate tools (Wintemberg 1940:Plate XVI, Figure 1, #s 1 to 3, 5 and 11), soapstone vessel fragments (Wintemberg 1940:Plate XVI, Figure 1, # 21), a hammerstone (Wintemberg 1940:Plate XV, Figure 2, # 4) and approximately 78 chert flakes (Wintemberg 1939:90). According to Wintemberg, "judging from the small quantity of material discovered, however, it (the site) had not been inhabited over any long period" (Wintemberg 1939: 87-88).

Cow Head

The Cow Head Site

The Cow Head site (Figure 1), located on the landward end of a former island that was once connected to the mainland by a long, narrow tombolo beach (now a road), and known to exist since the middle of the nineteenth century, has most recently been the focus of a number of investigations carried out by Dr. James A. Tuck of the Memorial University of Newfoundland in the late 1970's. Although the site was found to contain a sequence of Indian and Early Palaeo-Eskimo cultures stretching over 5000 years, Middle Dorset material was represented by only two endblades (Tuck 1978). It is possible, however, that evidence pertaining to a Middle Dorset occupation of the area has been destroyed in the past few decades, for "despite its 'protected' status a paving company saw fit to remove the bulk of the site for gravel in 1975" (Tuck 1978:138). Wintemberg also portrayed the site in 1939 as being much more substantial, containing structures; "most of the houses seem to have stood on the neck and the west end, which enabled the inhabitants to see enemies approaching from two directions...in one place on the neck there was a black, blubber-soaked deposit in which was found a fragment of a steatite object" (Wintemberg 1939:88).

Originally thought to represent a Beothuk site, the connection between the Cow Head site and its proximity to the Cow Head cherts has long been noted;

> There is a cliff of hard flint at Cow Head, on the West coast, above Bonne Bay, which is composed of the kind of flint suitable for arrow tips, and there the Red Indians repaired every summer to get their year's supply. The stones in the rough were then brought to a long, beachy isthmus, about a mile to the south, connecting Cow Head with the mainland, and here they were fashioned into neat, polished arrow-heads...by digging down a few feet in the beach rocks and sand, relics of their camp fires can be found, and it is believed that the Indians remained here for several weeks, when they came to procure arrow-heads (Devine 1899:7).

Wintemberg also indicated that "the presence of chert in the limestone rocks near this site made this the most important aboriginal manufacturing centre along the entire coast" (Wintemberg 1939:88), and the connection between the site and the raw material source was again expressed by Tuck, "...the Cow Head cherts which outcrop on the headland were apparently a primary attraction for the aboriginal inhabitants of the site" (Tuck 1978:138).

Factory Cove

Although initially thought to represent a Middle Dorset occupation, then an Early Dorset encampment, Factory Cove has since been positively identified as representing a Groswater Palaeo-Eskimo site (Auger 1983).

St. Pauls

During a limited survey of the Broom Point area in 1982, Auger collected a small number of brown and black chert flakes eroding from a bank located to the east of the bridge that crosses the St. Pauls Inlet (Figure 1). No diagnostic cultural material was retrieved, although the site was noted to possibly extend into the garden plot adjacent to it (Tuck and Auger 1982). As well, during a brief reconnaissance of the area in 1984, Nagle located two chert outcrops along the beach east of the bridge; one seam consisting of a light bluish-black chert with white speckles, and a second comprised of highly fractured medium grey chert. Nagle noted that "the entire area deserves much more attention, since we found quite a variety of different coloured and textured cherts along the beach which were not represented in the two outcrops" (Nagle 1985:14).

Broom Point Headland (Figures 1, 2, 18 and 19)

Small Promontory North of DlBl-1

During a complete survey of the point undertaken by the author in 1984, a small flaking station was located by subsurface testing on the first projecting point of land north of the Broom Point site. No diagnostic cultural material was recovered and there was no evidence of any features or structures. However, various flakes made from local cherts (identical to those collected from DlBl-1) as well as a few examples of Ramah chert were retrieved, and the site is probably related to the Middle Dorset occupation of the Broom Point site (Krol and Tuck 1984).

Promontory South of DlBl-1 (Figure 19)

A small flaking station was also located on the first promontory immediately south of the Broom Point site, just beyond the small cove. Initially reported by Auger in 1982, and re-located during the author's 1984 investigations at Broom Point, the site probably reflects Middle Dorset utilization of the Broom Point headland as well. A relatively large number of chert flakes, again identical to those collected from DlBl-1, were found eroding from the terrace edge, but despite testing no diagnostic artifacts were recovered (Tuck and Auger 1982; Krol and Tuck 1984).

Terrace Site

What may have once represented a campsite similar in size and perhaps nature to the Broom Point site was located on the first promontory north of the Western Brook outlet on the Broom Point headland, just past the dunes and the sandbars. Initially discovered by Tuck during an earlier survey of Gros Morne National Park (Tuck 1972a,b), the site was re-located during the author's 1984 investigations at Broom Point (Krol and Tuck 1984, 1985). The site is buried approximately 10 cm in sand, in the high terrace overlooking the Gulf of St. Lawrence, and consists of cultural material eroding from about 80 metres of the terrace edge. Although no diagnostic artifacts were recovered, 33 flakes of various cherts similar to those found at the Broom Point site were collected, and several large concentrations of fire-broken rock, burnt soil and charred fat were noted. Unfortunately, the site has been seriously disturbed by wind erosion and by slumping of the terrace edge; the majority of the material was found on the slope, and testing of areas immediately back from the embankment edge did not produce any cultural material. It is believed that the majority of this prehistoric site is now gone (Krol and Tuck 1984, 1985).

Unnamed Point North of Sally Cove

During the 1972 survey of Gros Morne National Park, Tuck also visited the first point immediately north of Sally Cove (Figure 1), where a number of "arrowheads" were rumored to have been found by local residents. An intensely black humus approximately 2-5 cm thick lying atop a cobble beach was recorded for the area. Although no cultural material was retrieved at the time of Tuck's visit, "from the description of local residents, however, a small, perhaps Dorset Eskimo campsite is suspected" (Tuck 1972b:3).

Paynes Head, Rocky Harbour

Tuck also located a small Dorset Eskimo campsite at Paynes Head, Rocky Harbour (Figure 1) during his survey in 1972. Situated at the end of the road through the community, the site is "now nearly obliterated by road construction and the more recent addition to the local fish processing plant...save a quantity of chips and flakes which can occasionally be found, the site is for all practical purposes destroyed" (Tuck 1972b:3-4). No evidence of features or structures was noted and few artifacts were retrieved, although probable Middle Dorset material previously collected from the site included a triangular endblade fragment, a microblade and a soapstone pot fragment; "all material pertains to a small Dorset Eskimo occupation" (Tuck 1972b:3).

Norris Point 1 and 2

Norris Point 1 and 2 are situated in the more sheltered areas of Bonne Bay, the former at Donovan's Point on the north shore, and the latter approximately 2.6 kilometres northwest at Decker's Cove. Not much remains at either site, partly because of natural erosion, and partly due to the fact that the existence of Norris Point 1 (at least) had been known locally for many years prior to Wintemberg's report in 1939, and Harp's visit a decade later;

> Indeed, when I arrived in 1949 to check further on its potentialities, it was immediately apparent that the site had been completely disturbed and rifled of

> its treasures. I was later informed that artifacts in untold quantities had been dug up here by the local boys and sold to travellers at the steamer dock, a mere two hundred yards away (Harp 1964:32).

Originally thought to contain a Dorset Palaeo-Eskimo component in addition to Maritime Archaic material (Wintemberg 1939; Harp 1964; Tuck 1972b), the Palaeo-Eskimo collection from Norris Point 1 was later re-examined by Bishop, who noted a similarity with Fitzhugh's Groswater Dorset from Labrador (Bishop 1974). It is now apparent that Norris Point 1 (and perhaps Norris Point 2) represent Groswater Palaeo-Eskimo sites.

Northern Coastal Hunter-Gatherers

It is becoming increasingly apparent that maritime hunter-gatherers (those groups that in some manner exploit the seas and for whom marine foods form the largest portion of the intake of either calories or protein in the diet) represent a specialized, complex subset of hunter-gatherer people, characterized by a number of distinctive traits (Yesner 1980). The major factor influencing behaviour among maritime hunter-gatherers is the nature of the coastal resources exploited, which are often "clumped" in their spatial and temporal distribution (Schalk 1981:53). Coastal areas tend to have a large number of ecological niches crowded into a given unit of area, exhibiting "species packing," and coastal settlements are frequently located in areas where migratory resources are present; resources that can be intensively exploited with a higher maximum sustained yield than those which tend to be more dispersed (Yesner 1980:729). Schałk has noted, however, that such "oceanic pastures" are generally only available for human exploitation at relatively few locations, owing to physiographic factors which restrict and direct migration (Schalk 1981:58).

In general, coastal settlements tend to be optimally located to take advantage of several resources from a single location: "one consequence of linear coastal settlement patterns, and of the nature of maritime resources themselves, is that maritime collecting is best undertaken from a single location" (Yesner 1980:730). With regard to northern coastal environments, especially "where the periodicity of resources is highly seasonal but where they do not vary spatially, it is expected that residential mobility will be reduced," for in such areas "where fish, whales, seals, birds, and reindeer/caribou come to, or pass by or near, the same location, the most efficient placement of the main settlement is at their point of overlap and thus settlement will be sedentary or near sedentary" (Renouf 1984:22). In such a situation those resources farther away than a single day's return trip will be exploited by means of special purpose satellite camps (Renouf 1984:25).

Such behaviour among hunter-gatherers is an example of what Binford has defined as a "logistical collecting strategy," which is characterized by 1) storage of food for at least part of the year, and 2) logistically organized food-procurement parties; "special task groups may leave a residential location and establish a field camp or station from which food-procurement operations may be planned and executed. If such procurement activities are successful, the obtained food may be field processed to facilitate transport and then moved to the consumers in the residential camp" (Binford 1980:10). A logistical collecting strategy necessitates that settlements be at least semi-sedentary in nature, that is, "communities whose members shift from one to another fixed settlement at different seasons or who occupy more or less permanently a single settlement from which a substantial proportion of the population departs seasonally to occupy shifting camps" (Binford 1980:13).

Coastal hunter-gatherers also exhibit technological complexity, producing many bulky items and stationary facilities (Renouf 1984), in addition to highly specialized composite tools such as harpoons, which may include harpoon end-blades, harpoon heads, foreshafts, lines, toggles and floats (Yesner 1980:730). The use of boats among many coastal populations is common and provides a tremendous transportation advantage, increasing the potential catchment area by allowing many widely dispersed yet locally concentrated resources to be harvested and returned to a central settlement (Yesner 1980:730). The availability of water transport (as well as skis or sledges) also mitigates the likelihood that all necessary resources must be located within a day's round trip of any single location, since technological innovations tend to increase travel speed as well as the amount of material that can be transported (Schalk 1981:62).

Yesner has noted that coastal zones, with shorter food webs, tend to be less stable than the open ocean, and fluctuations in the availability of favoured, high biomass resources would have great impact on coastal populations (Yesner 1980:729). The practice of storage is one method of dealing with seasonal fluctuations in resources and is often characteristic of coastal groups (Yesner 1980:729); "if a natural resource is available only during a short span of time, however bountiful it may be, it will help feed the community only for this period unless it is stored...if storage is practiced, however, the same resource will provide a staple food for a much longer period of time" (Testart 1982:525). The accumulation of substantial food reserves can have a double effect on a residence pattern, by inhibiting the possibility of residential mobility, while at the same time suppressing its necessity (Testart 1982:524). In terms of marine resources, it should be noted that the long term preservation of animal flesh requires more elaborate processing than that needed for fish, although in the specific case of the Arctic regions, freezing provides an easy way of preserving food (Testart 1982:528).

Significance of the Broom Point Site

In reviewing the list of known Middle Dorset sites recorded for the study area, one thing becomes evident: the scarcity of large semi-permanent settlements possessing house structures or other substantial features and middens along the west coast of the Northern Peninsula. With the exception of Phillip's Garden, the Point Riche site, and perhaps Keppel Island, all located in the Port au Choix area, the majority of the sites appear to represent smaller, more temporary Middle Dorset encampments, probably either seasonal in nature or perhaps representing special purpose extractive sites. Unfortunately, only preliminary investigations, mainly concerned with initial site location, cultural identification and surface collection, have been carried out for the bulk of these more numerous, smaller sites, and it is difficult to draw any conclusions regarding similarities or differences between them. All that can perhaps be commented on is their coastal orientation, usually located on headlands or near the mouths of inlets and rivers (Figure 1), and their apparent Middle Dorset affiliation (determined mainly through the presence of diagnostic artifacts such as un-notched triangular endblades and aysmmetrical bifaces).

However, surveys undertaken along the west coast of the Northern Peninsula have been by no means exhaustive, and it is possible that other large semi-permanent Middle Dorset sites exist in the study area (the Point Riche site with its numerous house depressions remained undetected through a number of surveys of the Port au Choix area), or have been obliterated through time (the Cow Head site as a possible example). A host of additional small (and therefore less visible) Middle Dorset sites of a more temporary nature also remain to be discovered in all probability in the study area, especially in places away from the immediate coast, along rivers or in the mountains, where surveys have been less intensive or non-existent.

Middle Dorset as Northern Hunter-Gatherers

It is evident from the location of the sites recorded to date for the study area (Figure 1) that the primary focus of settlement among Middle Dorset populations was along the coast. That marine resources were heavily exploited is supported by the coastal orientation of the site, an emphasis on marine mammals, especially seal, in the faunal assemblages (Harp 1976; Renouf 1986), and the specialized maritime technology that is reflected in the artifact assemblages, represented by triangular chipped stone endblades, ground stone lances, and where preserved, harpoon heads of bone or ivory, in addition to unilateral and bilateral barbed points of bone (Wintemberg 1939, 1940; Harp 1964; Renouf 1985b, 1986). The Middle Dorset populations from the west coast of the Northern peninsula are thus thought to represent northern coastal hunter-gatherers (additional supporting evidence will be given in the following discussion).

To reiterate, the Phillip's Garden site, situated on the more sheltered northern coast of the Point Riche peninsula (Figure 1), has been interpreted as representing a large semi-permanent Middle Dorset site, containing both winter and summer house structures (Harp 1976), in addition to rich midden deposits (Harp 1976; Renouf 1986). Stationary features include interior storage pits and/or bone pits associated with the winter house forms (Harp 1976; Renouf 1986), and bulky, highly specialized artifacts are represented by soapstone vessels/vessel fragments, large sandstone abraders, and what have been interpreted as "sled runners," made from bone and often possessing incised decoration (Harp 1964; Renouf 1986). The site is extensive, covering an area of 20,000 m^2 at a minimum, and contains at least 48 shallow house depressions, not all of which appear to have been occupied at the same time (Renouf 1985c). Radiocarbon dates from the site indicate that occupation took place from approximately 1740-1295 B.P. (Renouf 1985c).

Harp considered Phillip's Garden to be a more or less sedentary Middle Dorset base from which forays could be made either inland to exploit caribou, or along the coast to fish for salmon (Harp 1976). As has been already mentioned, the Point Riche peninsula represents one of the most prominent headlands on the west coast of Newfoundland, and the location of Phillip's Garden is ideally suited to the interception of harp seal herds during their spring migration north. It is evident that these aggregations of harp seal were intensively exploited by the Middle Dorset inhabitants of Phillip's Garden, as a preponderance of harp seal bone, including immature specimens, was retrieved from the middens (Harp 1976). Harp noted that in one winter house (House 4) approximately 25,000 bones and bone fragments were recovered, 98 % of which appeared to be seal, almost exclusively harp (Harp 1976:128). Harp seal, however, would have been only available for a short time in the spring, and it is unlikely that this resource alone would have enabled the Middle Dorset population of Phillip's Garden to remain semi-sedentary; even if stored, it is doubtful whether the meat would have kept for an extended period once the warm weather began, unless some method of preservation other than freezing was implemented.

However, other marine, terrestrial, avian and piscine resources would have been available seasonally (and a small number year-round), overlapping in the immediate vicinity of Phillip's Garden or else accessible a short distance from the site, including the majority of those resources summarized in Table 1 and discussed in Chapter 2 for the west coast of the Northern Peninsula. Other varieties of seal, as well as caribou, red fox, beaver, fish and migratory fowl have been identified in the middens from Phillip's Garden (Harp 1976; Renouf 1986), and artifacts made from whale bone and ivory have also been recovered from the site, indicating that some type of whale as well as walrus (or their by-products) were available to the site inhabitants for use as raw materials.

Renouf has noted that caribou comes second in frequency after seal in the material recovered from the Feature 2 midden, excavated during the more recent investigations at the site (Renouf 1986). Caribou would have been available from mid-April to mid-November in the nearby Long Range Mountains, located approximately 30 kilometres inland (Cameron 1958; Bergerud n.d.), and in prehistoric times may have been accessible at the coast in the summer as well. During their fall migration in particular, caribou herds come together in large numbers and are in prime condition, possessing newly formed back fat as well as new winter "fur" (Jochim 1977), and it is postulated that they would have been exploited from satellite camps in the mountains or at inland river crossings at this time. A probable Middle Dorset caribou hunting camp, the Pope's Point site, has been located at the junction of the Exploits River and Badger Brook in central interior Newfoundland (Linnamae 1975), and it is likely that such sites exist in the interior of the Northern Peninsula as well. It is not known whether caribou meat was stored in the fall for later consumption in the winter, but as few resources would have been available for exploitation between mid-November and mid-March (Table 1), storage would present an optimal strategy if caribou were indeed hunted in the fall, and if excess supplies were easily attainable.

Significance of Broom Point

That the Middle Dorset populations in the study area represent northern coastal hunter-gatherers is evident, and it next remains to establish the nature of the relationship that must exist between the large semi-permanent Middle Dorset sites and the more numerous, small temporary sites of apparent Middle Dorset affiliation that have been located along the west coast of the Northern Peninsula. In this specific instance, the significance of Broom Point, a small seasonal Middle Dorset site, and its relationship to the larger, more complex semi-permanent sites, as represented by Phillip's Garden, will be examined.

Hypothesis 1

One explanation of Broom Point's role in Middle Dorset settlement-subsistence patterns along the west coast of the Northern Peninsula is that the site represents a seasonal base and is therefore unconnected to a large semi-permanent site. This seems unlikely, especially in view of the apparently temporary nature of the Broom Point site that has been demonstrated in the preceding chapter. Settlement-subsistence patterns among northern coastal hunter-gatherers in general do not include the seasonal establishment and relocation of base camps in connection with seasonal movements of resources. In addition, the presence of both summer and winter house forms at Phillip's Garden indicates probable year-round settlement among Middle Dorset populations in this area of the Northern Peninsula.

Hypothesis 2

Another explanation of Broom Point's role in Middle Dorset settlement-subsistence patterns along the west coast of the Northern Peninsula is that the site represents a satellite camp, the primary function of which was to obtain raw materials in the form of various cherts for the purpose of reduction and tool manufacture. Thus, the location of the site would have been chiefly determined by its proximity to local chert sources, and extractive activities would have been incidental to the major activities of lithic procurement and tool formation. Seasonality of the site would almost certainly be concurrent with non-winter conditions, when absence of snow cover would allow easy access to raw material, and travelling conditions would be optimal. Broom Point could thus be viewed 1) as a special purpose satellite camp possibly connected to Phillip's Garden, 2) as a special purpose satellite camp connected to the possibly large semi-permanent Middle Dorset site that once existed at Cow Head, or 3) as a special purpose satellite camp connected to an as yet undiscovered semi-permanent Middle Dorset site in the study area.

Of the three explanations given above, the first one appears to be the best option (even though the exact location of the base camp is unknown at the present time). The Phillip's Garden site and the more temporary Broom Point site are believed to be contemporaneous, with the radiocarbon dates from the Middle Dorset component at Broom Point (1650± 90 B.P., Beta-4471; 1420±70 B.P., Beta-11375; and 1370±100 B.P., Beta-11376) falling well within the range of Middle Dorset occupation that has been established for Phillip's Garden (approximately 1740-1295 B.P., Renouf 1985c), and although a detailed comparison has not been undertaken, styles of endblades and other diagnostic Middle Dorset artifacts recovered from Broom point appear to be identical to a great many of those retrieved from Phillip's Garden (cf. Harp 1964; Renouf 1986).

In addition, no chert sources have been documented for the Port au Choix area to date, and it is possible that none exist in the immediate area, as the geological sequence that comprises the Port au Choix peninsula and environs (including the St. George and Table Head Groups) consists mainly of carbonates, characterized in this specific region by virtually flat-lying rocks, apparently containing no cherts (James and Stevens 1982). Although a controlled, detailed examination was not undertaken, a number of those local lithic types discussed in Chapter 4 for the Broom Point site, particularly the Cow Head varieties, have been identified by the author as occurring in a great many of the tools from the artifact assemblages retrieved during the more recent investigations at Phillip's Garden.

Although the Phillip's Garden site is located a fair distance from Broom Point, approximately 120 kilometres north along the coast (Figure 1), this may not have posed a logistical problem, especially if the Middle Dorset possessed boats. Unfortunately, there is no direct evidence at present to indicate the presence of any form of boat among Middle Dorset populations, although as Linnamae has noted,

> ...because of the coastal and insular location of sites it is probable that some form of water transportation was used. Of course, in an Arctic area boats are not essential for crossing water nor for the hunting of sea mammals, but they do contribute to a degree of mobility and effectiveness which the Dorset culture people seem to have had (Linnamae 1975:12-13).

In his discussion of logistical collecting strategies among hunter-gatherers, Binford has noted that a logistical radius (or catchment area), while conditioned in size by the need to supply goods to consumers at a main residential camp, is also conditioned by the need for information regarding a much broader area (Binford 1982:8). With regard to the Palaeo-Eskimo occupations of Newfoundland and Labrador, it is evident that during the Middle Dorset period at least, considerable communication seems to have existed between Dorset peoples of Newfoundland and Labrador, particularly notable in the exchange of lithic raw materials as stock and possibly also as finished artifacts (Tuck and Fitzhugh n.d.). This implies movement of either populations or goods over large distances, and necessitates a knowledge of considerable stretches of territory among Middle

Dorset people in Newfoundland and Labrador.

The duration of occupation for temporary satellite camps need not be confined to only a few days or weeks, and consequently assemblages recovered from such sites may reflect activities additional to the site's primary function. Binford has noted among the Netsilik, who represent logistically organized hunter-gatherers, that hunting parties may remain away from the residential base for extended periods of time, from four weeks up to three months in some cases, depending on the location and the nature of the resources exploited;

> In many cases groups may remain away from residential camps for considerable periods of time...regardless of the duration of penetrations into the logistical zone, maintenance accomodations including food, shelter, etc. must be provided for the work party while it is away from the residential location. Thus, the remains from exploitation and processing for transport, from consumption, and of creature comfort accomodations of the task group all contribute to the materials remaining at logistical camps (Binford 1982:7-8).

If a special purpose site is utilized repeatedly over a number of years, a likely scenario since satellite camps are usually positioned in the most optimal locations for the extraction of a particular resource, then its visibility will increase, due to the repeated use of the site from year to year, in addition to the build-up of residues connected to the extraction activities, and the satellite camp may take on the initial appearance of a more substantial exploitation site (Binford 1980). It is possible that Broom Point represents such a site.

The second option, that Broom Point is a special purpose satellite camp that is connected to the Cow Head site, is less likely as 1) the destruction of much of the Cow Head site does not allow anything beyond speculations to be made regarding the exact nature of the Middle Dorset component that may have once existed on the isthmus connecting Cow Head with the mainland, and 2) it does not seem logical that populations would move from Cow Head (if it does indeed represent a large semi-permanent Middle Dorset site), where excellent lithic material is readily available, to Broom Point, for the seasonal activities of lithic reduction and tool manufacture. That Middle Dorset groups from lithic resource-scarce Port au Choix may have moved past Cow Head to Broom Point can, perhaps, be explained by either the presence of other Middle Dorset people already occupying the Cow Head peninsula, or by lack of knowledge concerning the lithic material available at Cow Head. It is also a possibility that Broom Point is related to an as yet undetected large, semi-permanent Middle Dorset site.

Hypothesis 3

A third explanation is that the Broom Point site represents a seasonal camp in which the activities of raw material procurement and lithic reduction were supplementary to other extractive pursuits. This implies quite a different settlement pattern for the Middle Dorset in the study area from Hypothesis 1 or 2, indicating a seasonal departure of at least a portion of the population from large semi-permanent sites to smaller, perhaps shifting summer camps along the coast. Populations would have returned annually to the large semi-permanent bases in the winter for the purposes of nucleation, the sharing of stored foods and the communal hunting of the migratory harp seal in the spring. Although similar to Hypothesis 2, the difference between a summer departure of part of the population, possibly a task group, from large semi-permanent sites for an unspecified period of time (Hypothesis 2), and a seasonal departure of at least part of the population from the large semi-permanent sites (Hypothesis 3), lies in 1) the purpose of the sites, and 2) the range of population at the sites, that is, a special purpose raw material procurement site might be very short-term, occupied only by a task group, while a seasonal camp might include entire families.

As in Hypothesis 2, Broom Point can be viewed 1) as a seasonal site connected with Phillip's Garden, 2) as a seasonal site connected with the supposed large Cow Head Middle Dorset site, or 3) as a seasonal site connected with an as yet unknown large semi-permanent site. The tentative connection between the Middle Dorset population from Broom Point and Phillip's Garden can again be made, based on the same evidence discussed for Hypothesis 2. That a portion of the

Middle Dorset population remained at Phillip's Garden is supported by the presence of summer house forms at the site, although these represent a very small sample of the houses excavated to date; Harp only mentions one summer house (House 5) in his discussion of winter and summer structures, even though at this point in his investigations twenty of the house depressions were either partially or completely excavated (Harp 1976). Additional summer house forms, however, are believed to exist at the site, represented by extremely shallow depressions (Harp 1976; Renouf, pers. comm.).

The question remains concerning why some groups of Middle Dorset people would leave established semi-permanent sites that were situated in coastal areas where resources could have supported the site inhabitants year-round (as was apparently the case for at least some of the Middle Dorset inhabitants of Phillip's Garden), to occupy smaller seasonal coastal settlements such as represented by Broom Point. The attraction of the chert sources in the Cow Head - Broom point area has been already mentioned, but if the procurement of raw material was the primary objective, one would expect a settlement-subsistence strategy like that proposed in Hypothesis 2. It is postulated that the establishment of seasonal sites like Broom Point may have been partly related to the resources and their scheduling along the west coast of the Northern Peninsula.

The seasonality of the Broom Point site has already been suggested as non-winter, and it has been proposed in a previous chapter that seasonality can perhaps be narrowed down to the time period between the end of the spring harp seal migration, and the beginning of the fall caribou migration, approximately late May to mid-October. If one examines the resource schedule for the study area (Table 1), it can be noted that a large number of potentially exploitable migratory resources make their appearance in the study area (or are at their peak times of availability in the case of year-round residents) between late May and mid-October, the majority of which overlap in the summer months. These include the harbour seal, grey seal (for some areas), walrus, atlantic cod and other summer inshore ocean fish, anadromous brook trout and arctic char, black bear, summer caribou, migratory fowl and edible berries, in addition to other year-round resources. In contrast to the migratory harp seal, fall caribou, and perhaps the atlantic salmon, which aggregate in great numbers for very brief periods of time at specific locations in the study area, the above resources tend to be fairly evenly dispersed along the west coast of the Northern Peninsula in the summer months, with the probable exception of choice locales existing in certain areas.

The intensive exploitation of harp seal in particular, an apparently favoured, high biomass resource (at least among the Middle Dorset at Phillip's Garden) would undoubtedly be best carried out from sites situated in those locations providing the most ready, predictable access to the herds in the late spring. As has been already noted, the west coast of the Northern Peninsula is characterized today by only a few substantial projecting headlands (Figure 1), and prehistorically, portions of these would have been below sea level. Thus, although the harp may pass close by the west coast during their spring migration north, only a few prime locales exist for easy exploitation of the herds. The establishment of semi-permanent bases in or near these few prime locales would be understandable, especially if this predictable resource was exploited annually from such sites.

A settlement-subsistence pattern for the Middle Dorset along the west coast of the Northern Peninsula, characterized by the establishment of large semi-permanent sites, the location of which was chiefly determined by access to spring harp seal migrations (as well as by the presence of other marine resources), and from which special task groups could leave to establish satellite camps for the purpose of hunting caribou in the mountains, for example, or perhaps fishing at good salmon rivers along the coast, has already been postulated. That a portion of the population may have departed from these semi-permanent bases to occupy small seasonal sites along the coast in the summer is also plausible. As Binford has noted among hunter-gatherer populations,

> ...many human groups may move through seasonal phases in which their coverage and positioning tactics change. For instance, in some systems people may be dispersed in summer, behaving like foragers by employing a mobility strategy designed for coverage, seeking to maximize the "encounter" with resources, yet during the winter they may be living from stores at a site which was positioned in terms of logistical concerns. Mobility patterning may be both geographically variable and regionally complicated (Binford 1982:11).

Whereas the nature of resources and subsistence activities are generally considered to be prime factors conditioning site placement and demographic arrangements (Jochim 1977), cultural factors can also influence settlement, and even though "environmental variables can set the bounds within which certain strategies work effectively according to abundance, spatial and temporal distribution, and the patterns of variation of resources...in most environments there are a number of organizational strategies which can fill certain needs" (Wiessner 1982:176). It is possible that social factors may have also influenced the hypothetical seasonal break-up of the semi-permanent Middle Dorset winter sites, in additionto the fairly even distribution of resources available along the west coast in the summer, and perhaps the need to replenish supplies of raw material for tool manufacture. Social factors again may have influenced the fusion of the camps in the fall, allowing, perhaps, the communal hunting of caribou from satellite camps in the mountains, in addition to nucleation and perhaps ceremonial activities, the sharing of stored foods in the resource-scarce winter months (Table 1), and the communal hunting of migratory harp seal in the spring.

Such a settlement-subsistence pattern among the Middle Dorset along the west coast of the Northern Peninsula bears general similarities to Fitzhugh's "Modified Maritime" settlement-subsistence system as described for the Dorset from Hamilton Inlet, Labrador; a system characterized by "a coastal settlement pattern and a year round adaptation to marine fauna," and including two main settlement types, 1) large, relatively permanent winter settlements, and 2) seminomadic summer occupations, with group fragmentation occurring seasonally following break-up of winter settlements (Fitzhugh 1972:161). However, connecting the seasonal Broom Point site with a specific large semi-permanent site, such as Phillip's Garden, or perhaps Cow Head, does present problems, mainly in explaining why populations would travel 120 kilometres south to Broom Point in the case of the former, or a very short distance along the coast in the case of the latter. It is possible that a connection with Phillip's Garden exists if raw material procurement, although a subsidiary activity during the seasonal occupation of Broom Point, nevertheless determined site location at this far distance. It should be stressed that what is important here is not connecting Broom Point with a particular large semi-permanent site, such as Phillip's Garden, but relating the small seasonal Broom Point site to the sort of large semi-permanent site type that Phillip's Garden represents.

Until a more detailed data base is available concerning the exact nature of the other small Middle Dorset sites described for the study area, Hypothesis 3 seems the most plausible alternative regarding Middle Dorset settlement-subsistence along the west coast of the Northern Peninsula, as it more readily accounts for the existence of the numerous small sites of apparent Middle Dorset affiliation that have been recorded to date along the coast, and the apparent dearth of large, more permanent sites possessing winter house structures, other substantial features and middens in the study area. Such a settlement-subsistence system as proposed by Hypothesis 3 would necessarily include many small seasonal sites (reflecting summer break-up), a smaller number of large semi-permanent base camps (reflecting winter fusion), as well as a number of special purpose satellite camps connected to both types of settlement.

That the majority of the numerous small Middle Dorset sites recorded to date for the study area represent seasonal sites, as opposed to special purpose satellite camps, is an assumption based on the observations that 1) the sites are usually situated in coastal areas where a wide range of resources would have apparently been available (as opposed to a particular resource only), and 2) that cultural material recovered during surface collecting appears to include a wide range of artifact types for most of the sites. That these sites do not represent semi-permanent sites is indicated by their small size, apparent lack of structures and midden deposits, and the paucity of the artifacts retrieved.

Hopefully, once a greater data base is established for the study area (particularly regarding the detailed investigation of networks of associated sites), Hypothesis 3 can be examined in the light of more concrete evidence. Seasonal differences in mobility among Middle Dorset populations along the west coast of the Northern Peninsula (that is, high residential mobility in the summer and reduced mobility during the winter), should be reflected in the site assemblages;

> The overall effect from a regional perspective would be extensive interassemblage variability deriving from both conditions. We may also expect minor qualitative difference among assemblages from the winter villages... these are likely to be categorically different from mobile summer residences which would be highly variable and constitute a "noisy" category. Comparisons among winter residences would clearly warrant a categorical distinction of these from summer residences and they would be a "cleaner," less noisy category of greater within-assemblage diversity. Summer sites would be more variable among themselves but also less internally complex (Binford 1980:18).

Concluding Remarks

The primary objective of the research reflected in this dissertation was to alleviate the bias that exists in Middle

Dorset archaeology in western Newfoundland towards the intensive investigation of a single site type, the large semi-sedentary base camp. By focusing investigations on a small, apparently seasonal Late Palaeo-Eskimo encampment, as illustrated by the Middle Dorset component from the Broom Point site, it was hoped that 1) detailed information regarding the nature of a different Middle Dorset site type would be made available, and 2) the significance of the Broom Point site, in terms of Middle Dorset settlement-subsistence patterns along the west coast of Newfoundland's Great Northern Peninsula, would be further elucidated.

The Broom Point site (DlBl-1) has been interpreted as representing a small seasonal Palaeo-Eskimo encampment, containing evidence of at least two separate occupations by small Middle Dorset groups, in addition to a handful of artifacts relating to an earlier Groswater presence. The most prominent activity reflected in the Middle Dorset artifact assemblages relates to the manufacturing and maintenance of stone tools, from the initial reduction of raw material (including a variety of local cherts), to the final stages of tool production. Extractive pursuits (mainly marine related) and processing activities are also represented at the site. The seasonality of both Middle Dorset occupations has been suggested as non-winter, with Broom Point probably representing a summer site, based on the nature of the resource scheduling in this particular northern coastal environment.

With regard to Middle Dorset settlement-subsistence patterns along the west coast of the Northern Peninsula, it has been postulated that 1) Middle Dorset populations in the study area represent northern coastal hunter-gatherers, characterized by a settlement pattern that includes the establishment of semi-permanent base camps (as represented by the Phillip's Garden site), and 2) a seasonal departure of at least a portion of the population from these large semi-permanent sites to smaller, more mobile camps along the coast in the summer likely took place in response to a combination of ecological and cultural factors, with populations returning to the large semi-permanent bases in the fall. It has been suggested that Broom Point represents such a site, in which the activities of raw material procurement and lithic reduction/tool manufacture were supplementary to other extractive and maintenance pursuits.

The settlement-subsistence pattern proposed for the Middle Dorset in the study area remains conjectural at present, although data currently being recovered from intensive investigations into Middle Dorset settlement-subsistence in the Port au Choix National Historic Park area of the Northern Peninsula may provide the necessary evidence to either support or discount the theory. Implications derived from this study for Middle Dorset settlement-subsistence elsewhere on the Island of Newfoundland may be, unfortunately, limited, as settlement-subsistence patterns are believed to be dependent to a large degree on the exact nature and the precise scheduling of the resources available in a particular environment, including the nature and location of raw material sources. Investigations at Broom Point, however, have succeeded in demonstrating the complex nature of Middle Dorset settlement-subsistence patterns in the environment provided by the west coast of Newfoundland's Great Northern Peninsula.

REFERENCES CITED

Auger, Reginald

1983 Factory Cove, an Early Palaeo-Eskimo component from the west coast of Newfoundland. Paper presented at the XVIth Annual Meeting of the Canadian Archaeological Association, Halifax.

Banfield, Colin E.

1983 Climate. In Biogeography and ecology of the Island of Newfoundland, edited by G. Robin South, pp. 37-106. The Hague, Boston.

Beck, Brian

1983a Underwater world: the harbour seal in Canada. Communications Directorate, Department of Fisheries and Oceans, Ottawa.

1983b Underwater world: the grey seal in eastern Canada. Communications Directorate, Department of Fisheries and Oceans, Ottawa.

Bergerud, A.T.

1961 The reproductive season of Newfoundland caribou. Ms. on file, Centre for Newfoundland Studies, Memorial University of Newfoundland, St. John's.

1967 The distribution and abundance of Arctic hares in Newfoundland. The Canadian Field-Naturalist 81 (4):242-248.

n.d. The caribou. In Way of Life Series No. 1. Ms. on file, Centre for Newfoundland Studies, Memorial University of Newfoundland, St. John's.

Binford, Lewis R.

1980 Willow smoke and dogs' tails: hunter-gatherer settlement systems and archaeological site formation. American Antiquity 45(1):4-20.

1982 The archaeology of place. Journal of Anthropological Archaeology 1:5-31.

Bishop, P.

1974 Final Report: 1973 Excavations at Norris Point, Gros Morne National Park. Ms. on file, Newfoundland Museum, St. John's.

Boulva, J. and J.A. McLaren

1979 Biology of the harbour seal, Phoca vitulina, in eastern Canada. Bulletin of the Fisheries Research Board of Canada 200.

Bowen, W.D.

1985 Underwater world: the harp seal. Communications Directorate, Department of Fisheries and Oceans, Ottawa.

Cameron, Austin W.

1958 Mammals of the Islands in the Gulf of St. Lawrence. National Museum of Canada Bulletin 154.

Carignan, Paul

1975 The Beaches: a multi-component habitation site in Bonavista Bay. Archaeological Survey of Canada 39. National Museums of Canada, Ottawa.

Carscadden, J.E.

1981 Underwater world: capelin. Communications Directorate, Department of Fisheries and Oceans, Ottawa.

Clark, J.G.D.

1975 Some basic concepts. In The Earlier Stone Age settlements of Scandinavia, pp. 1-32. Cambridge

University Press, Cambridge.

Communications Directorate

1983 Underwater world: Atlantic groundfish. Department of Fisheries and Oceans, Ottawa.

1984 Underwater world: arctic char. Department of Fisheries and Oceans, Ottawa.

Crabtree, Don E.

1972 An introduction to flintworking. Occasional Papers of the Idaho State University Museum 28. Pocatello, Idaho.

Crabtree, Don E. and B. Robert Butler

1964 Notes on experiments in flintknapping 1: heat treatment of silica minerals. Tebiwa 7(1):1-6.

Damman, Antoni W.H.

1983 An ecological subdivision of the Island of Newfoundland. In Biogeography and ecology of the Island of Newfoundland, edited by G. Robin South, pp. 163-206. The Hague, Boston.

Devereux, H.

1966 The Cape Ray Light site: a Dorset Eskimo site in south west Newfoundland. Ms. on file, Newfoundland Museum, St. John's.

Devine, P.K.

1899 The last red man: how he obtained his supply of arrow-heads. In Christmas Bells, No.8, p.7. Gray and Goodland Publishers, St. John's.

Dodds, Donald

1983 Terrestrial mammals. In Biogeography and ecology of the Island of Newfoundland, edited by G. Robin South, pp. 509-550. The Hague, Boston.

Evans, Clifford O.

1981 The 1980 field report of Frenchman's Island project. In Archaeology in Newfoundland and Labrador 1980, edited by Jane Sproull Thomson and Bernard Ransom, pp. 88-94. Historic Resources Division, Department of Culture, Recreation and Youth, St. John's.

Fitzhugh, W.W.

1972 Environmental archaeology and cultural systems in Hamilton Inlet, Labrador. Smithsonian Institution Press, Washington D.C.

1980 A review of Paleo-Eskimo culture history in southern Quebec-Labrador and Newfoundland. Etudes/Inuit/Studies 4(1-2):21-31.

Grant, D.R.

1972 Postglacial emergency of northern Newfoundland. Geological Survey of Canada 72(1):101-102.

Gutsell, B.V.

1949 An introduction to the geography of Newfoundland. Canada Department of Mines and Resources, Geographical Bureau, Information Series 1.

Harp, Elmer Jr.

1964 The cultural affinities of the Newfoundland Dorset Eskimo. National Museum of Canada Bulletin 200.

1976 Dorset settlement patterns in Newfoundland and southeastern Hudson Bay. In Eastern Arctic prehistory: Paleoeskimo problems, edited by Moreau S. Maxwell. Memoirs of the Society for American Archaeology 31:119-138.

Harp, E. and D.R. Hughes

1968 Five prehistoric burials from Port au Choix, Newfoundland. Polar Notes 8:1-47.

Howley, James P.

1915 The Beothucks or Red Indians: the aboriginal inhabitants of Newfoundland. Facsimile edition 1980 by Coles Publishing Company, Toronto.

James, Noel P. and Robert K. Stevens

1982 Excursion 2B: Anatomy and evolution of a Lower Paleozoic Continental Margin, western Newfoundland. Department of Geology, Memorial University of Newfoundland, St. John's.

Jochim, Michael A.

1977 Hunter-gatherer subsistence and settlement: a predictive model. Academic Press, New York.

Kennedy, Denis

1977 Field notes on chert sampling: Cow Head, Newfoundland. Ms. on file, Department of Anthropology, Memorial University of Newfoundland, St. John's.

Krol, Carol F. and James A. Tuck

1984 A preliminary report on the 1984 investigations at the Broom Point site, Gros Morne National Park. Ms. on file, Historic Resources Research Division, Atlantic Region, Parks Canada.

1985 Palaeo-Eskimo occupations at Broom Point, Gros Morne National Park, Newfoundland: a final report prepared for Parks Canada, Atlantic Region and Gros Morne National Park. Ms. on file, Historic Resources Research Division, Atlantic Region, Parks Canada.

Lear, W.H.

1984 Underwater world: Atlantic cod. Communications

Directorate, Department of Fisheries and Oceans, Ottawa.

Linnamae, Urve

1971 Preliminary report on the archaeological survey of Placentia Bay, Newfoundland (Parts 1 and 2). Ms. on file, Newfoundland Museum, St. John's.

1975 The Dorset culture: a comparative study in Newfoundland and the Arctic. Technical Papers of the Newfoundland Museum 1.

Macpherson, J. B.

1981 The development of the vegetation of Newfoundland and climatic change during the Holocene. In The natural environment of Newfoundland past and present, edited by A.G. Macpherson and J.B. Macpherson, pp. 189-217. Department of Geography, Memorial University of Newfoundland, St. John's.

Mansfield, A.W.

1959 The walrus in the Canadian Arctic. Fisheries Research Board of Canada, Circular No. 2.

1967 Seals of arctic and eastern Canada. Fisheries Research Board of Canada, Bulletin 137.

McLaren, J.A.

1962 Population dynamics and exploitation of seals in the eastern Canadian Arctic. In The exploitation of natural animal populations, edited by E.D. LeCren and M.W. Holdgate, pp. 168-187. Blackwell Scientific Publications, Oxford.

Mednis, Roberts J.

1981 Indigenous plants and animals of Newfoundland: their geographical affinities and distributions. In The natural environment of Newfoundland past and present, edited by A.G. Macpherson and J.B. Macpherson, pp. 218-250. Department of Geography, Memorial University of Newfoundland, St. John's.

Nagle, Christopher L.

1985 Lithic raw materials resource studies in Newfoundland and Labrador: a progress report. In Archaeology in Newfoundland and Labrador 1984, annual report No. 5, edited by Jane Sproull Thomson and Callum Thomson, in press.

Northcott, Tom H.

1974 The land mammals of insular Newfoundland. Wildlife Division, Department of Tourism, St. John's.

Parks Canada

1978 Parks Canada archaeology manual, volume 1: excavation records system. Department of Indian and Northern Affairs.

Pastore, Ralph T.

1982 The distribution of aboriginal sites on the Island of Newfoundland. Paper presented at the XVth Annual Meeting of the Canadian Archaeological Association, Hamilton.

Penney, Gerald

1980 A report on the archaeological survey of Bay D'Espoir. Ms. on file, Newfoundland Museum, St. John's.

1981 A preliminary report on the excavation of the L'Anse a Flamme site (CjAx-1). In Archaeology in Newfoundland and Labrador 1980, edited by Jane Sproull Thomson and Bernard Ransom, pp. 95-110. Historic Resources Division, Department of Culture, Recreation and Youth, St. John's.

1982 Archaeological investigations on the south coast of Newfoundland, 1981. In Archaeology in Newfoundland and Labrador 1981, edited by Jane Sproull Thomson and Callum Thomson, pp. 226-237. Historic Resources Division, Department of Culture, Recreation and Youth, St. John's.

Renouf, M.A.P.

1984 Northern coastal hunter-fishers: an archaeological model. World Archaeology 16(1):18-27.

1985a Report of the archaeological excavations at the Port au Choix and Point Riche peninsulas. In Archaeology in Newfoundland and Labrador 1984, annual report No.5, edited by Jane Sproull Thomson and Callum Thomson, in press.

1985b Archaeology of the Port au Choix National Historic Park: report of the 1984 field activities. Ms. on file, Historic Resources Research Division, Atlantic Region, Parks Canada.

1985c Archaeological research in the Port au Choix National Historic Park, northwest Newfoundland. Polar Record 22(141):693-697.

1986 Archaeological Investigations at Phillip's Garden and Point Riche, Port au Choix National Historic Park. Ms. on file, Historic Resources Research Division, Atlantic Region, Parks Canada.

Robbins, Douglas T.

1983 "Newfoundland Dorset" culture? Paper presented at the XVIth Annual Meeting of the Canadian Archaeological Association, Halifax.

1985 Stock Cove, Trinity Bay: the Dorset Eskimo occupation of Newfoundland from a southeastern perspective. Unpublished M.A. thesis, Department of Anthropology, Memorial University of Newfoundland, St. John's.

Rogerson, R.J.

1983 Geological evolution. In Biogeography and ecology of the Island of Newfoundland, edited by G. Robin South, pp. 5-36. The Hague, Boston.

Schalk, Randall F.

1981 Land use and organizational complexity among foragers of northwest North America. Senri Ethnological Studies 9:53-75.

Scott, Peter J.

1975 Edible fruits and herbs of Newfoundland. Oxen Pond Botantic Park, Department of Biology, Memorial University of Newfoundland, St. John's.

Scott, W,B. and E.J. Crossman

1964 Fishes occurring in the fresh waters of insular Newfoundland. Life Sciences Contribution No. 58, Royal Ontario Museum, University of Toronto.

1973 Fresh water fishes of Canada. Fisheries Research Board of Canada, Bulletin 184.

Sergeant, D.E.

1985 Underwater world: the hooded seal. Communications Directorate, Department of Fisheries and Oceans, Ottawa.

Simpson, David N.

1984 The Port au Port peninsula archaeology project: a preliminary report. In Archaeology in Newfoundland and Labrador 1983, edited by Jane Sproull Thomson and Callum Thomson, pp. 126-141. Historic Resources Division, Department of Culture, Recreation and Youth, St. John's.

Smith, K.E.H.

1983 Underwater world: the Atlantic salmon. Communications Directorate, Department of Fisheries and Oceans, Ottawa.

South, G. Robin

1983 Introduction. In Biogeography and ecology of the Island of Newfoundland, edited by G. Robin South, pp. 1-4. The Hague, Boston.

Steele, D.H.

1983 Marine ecology and zoogeography. In Biogeography and ecology of the Island of Newfoundland, edited by G. Robin South, pp. 421-466. The Hague, Boston.

Templeman, Wilfred

1966 Marine resources of Newfoundland. Fisheries Research Board of Canada, Bulletin 154.

Testart, Alain

1982 The significance of food storage among hunter-gatherers: residence patterns, population densities, and social inequalities. Current Anthropology 23 (5):523-537.

Thomas, David Hurst

1979 Archaeology. Holt, Rinehart and Winston, Montreal.

Threlfall, W.

1983 Seabirds. In Biogeography and ecology of the Island of Newfoundland, edited by G. Robin South, pp. 467-508. The Hague, Boston.

Tuck, James A.

1972a Progress report: Gros Morne Park archaeological survey, 1972. Ms. on file, Department of Anthropology, Memorial University of Newfoundland, St. John's.

1972b Final report: archaeological survey of Gros Morne Park, Newfoundland. Ms. on file, Department of Anthropology, Memorial University of Newfoundland, St. John's.

1976 Newfoundland and Labrador Prehistory. National Museum of Canada, Ottawa.

1978 Excavations at Cow Head, Newfoundland: an interim report. Etudes/Inuit/Studies 2(1):138-141.

1982a Prehistoric archaeology in Atlantic Canada since 1975. Canadian Journal of Archaeology 6:201-218.

1982b 1982 Excavations at Broom Point, a Palaeo-Eskimo site in Gros Morne National Park. Ms. on file, Historic Resources Research Division, Atlantic Region, Parks Canada.

1983 Excavations at Shamblers Cove-1982: a stage 3 impact report. Ms. on file, Department of Anthropology, Memorial University of Newfoundland, St. John's.

Tuck, James A. and Reginald Auger

1982 Excavations at a Dorset Eskimo site at Broom Point, western Newfoundland: preliminary report submitted to Parks Canada, Atlantic Region and Gros Morne National Park. Ms. on file, Department of Anthropology, Memorial University of Newfoundland, St. John's.

Tuck, James A. and William W. Fitzhugh

n.d. Palaeo-Eskimo traditions of Newfoundland-Labrador: re-appraisal. Ms. on file, Department of Anthropology, Memorial University of Newfoundland, St. John's.

Tuck, Leslie M.

1967 The birds of Newfoundland. In The book of Newfoundland, edited by Joseph R. Smallwood, Vol. III, pp.

265-316. Newfoundland Book Publishers Ltd., St. John's.

Wiessner, Polly

1982 Beyond willow smoke and dogs' tails: a comment on Binford's analysis of hunter-gatherer settlement-subsistence systems. American Antiquity 47(1):171-177.

Wintemberg, W.J.

1939 Eskimo sites of the Dorset culture in Newfoundland. Part I. American Antiquity 5:83-102.

1940 Eskimo sites of the Dorset culture in Newfoundland. Part II. American Antiquity 5(4):309-333.

Yesner, David R.

1980 Maritime hunter-gatherers: ecology and prehistory. Current Anthropology 21(6):727-750.

Table 1

Resource Availability for the Broom Point Study Area

Table 1: Resource Availability for the Broom Point Study Area

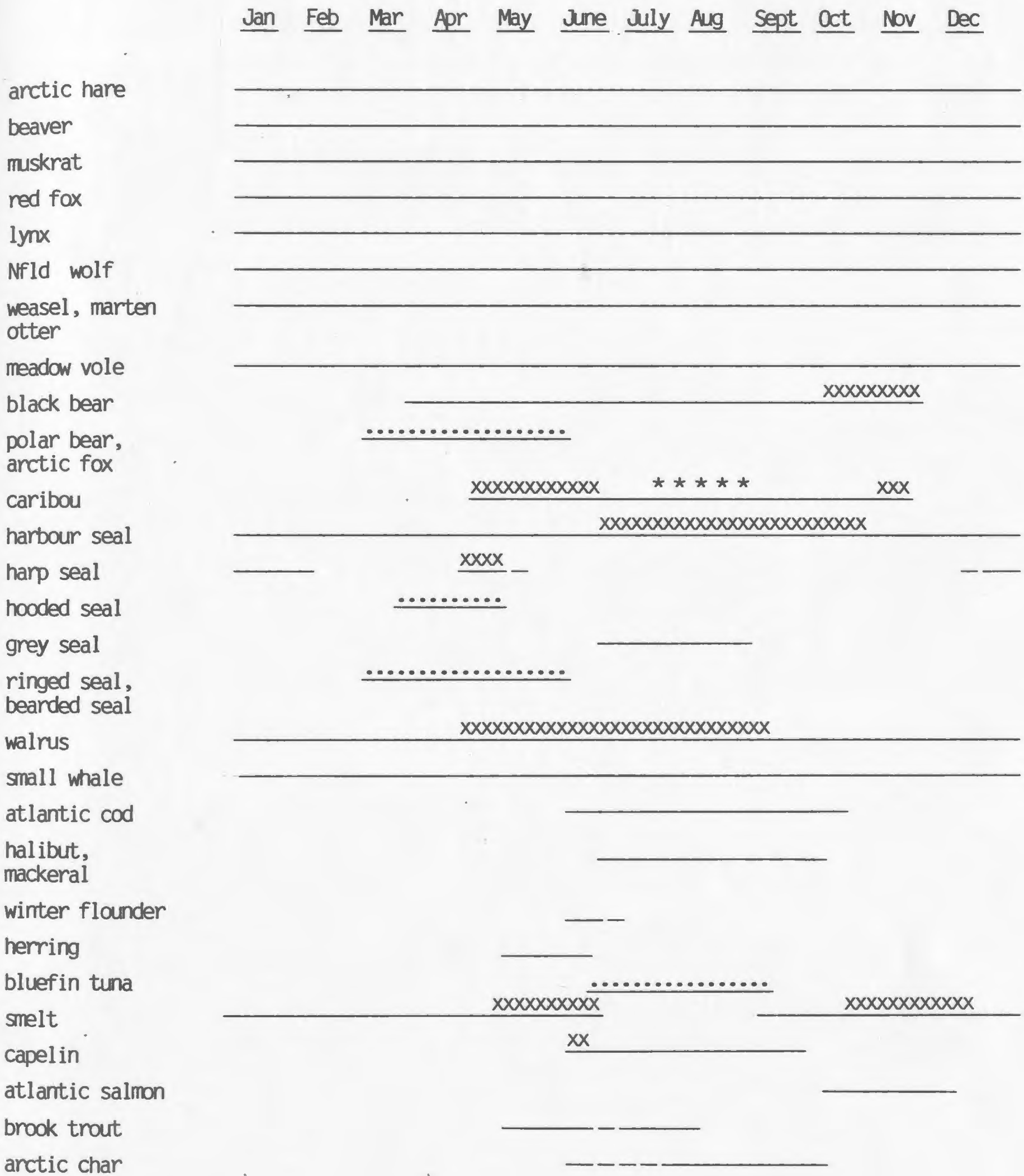

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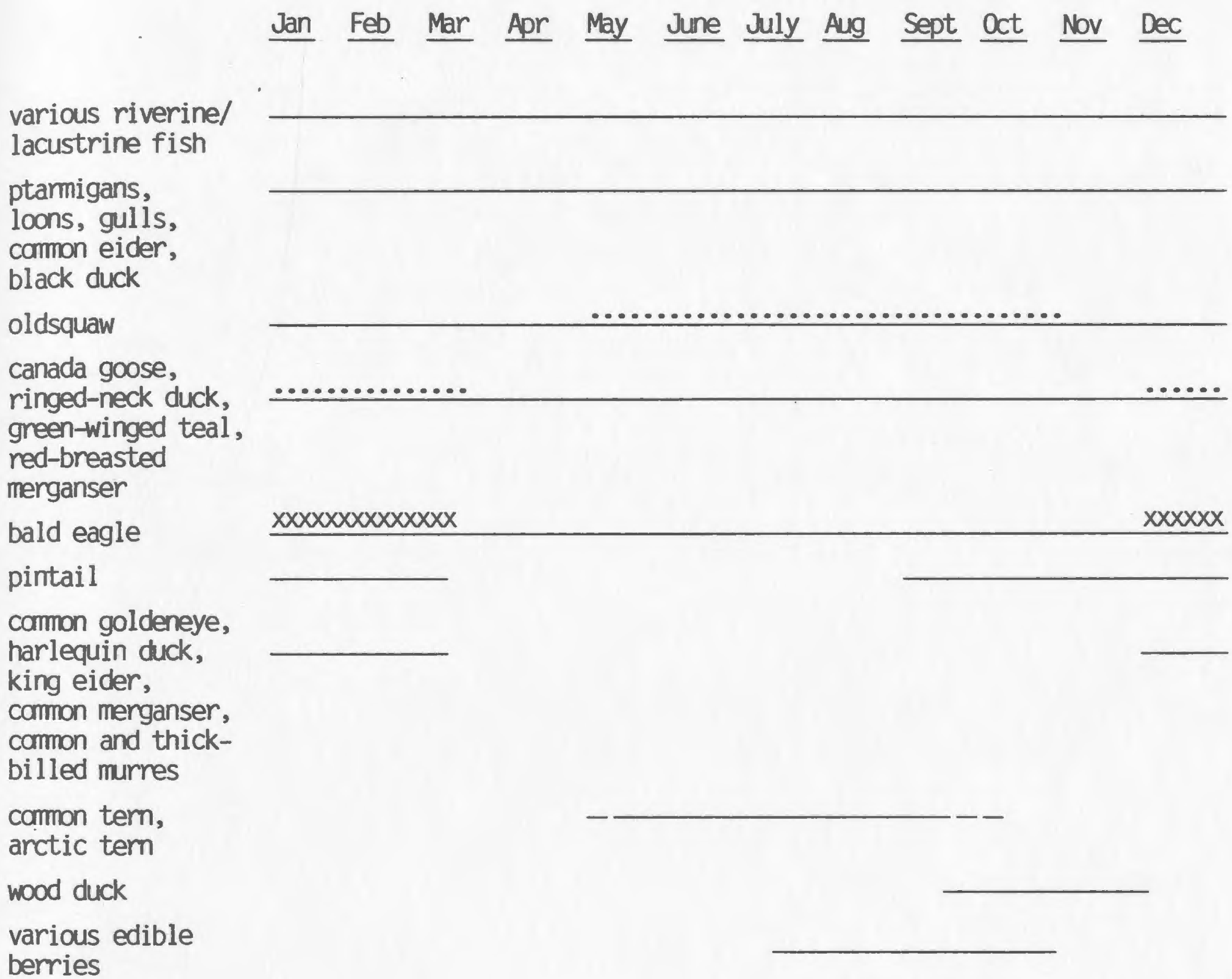
Table 1 Con't



Key

- ____________ -available in study area
- xxxxxxxxxxxxxxxxxxxxxx -peak times of availability
- * * * * * * * * * * * -hypothetical peak (caribou only)
- .... -occasional visitor to study area

Table 2

Combined Tool Assemblage from Broom Point

Middle Dorset Component

TABLE 2: COMBINED TOOL ASSEMBLAGE FROM BROOM POINT (DlBl-1), MIDDLE DORSET COMPONENT

ARTIFACT TYPE / LITHIC TYPE	triangular endblades	notched endblades	endblade fragments	ground stone lances	endblade preforms	bifaces with haft. mod.	bifaces without haft. "	biface preforms	dorsally mod. endscrap.	marginally ret. "	blade endscrapers	endscraper fragments	concave sidescrapers	unidentifiable tool frag	microblades & frags.	microblade cores/frags.	burin-like-tools	tip flute flakes	retouched/utiliz. flks.	hammerstones	Total	Percentage of Total
1	3	-	1	-	10	2	11	4	8	8	-	1	1	1	32	3	1	19	56	-	161	31.82%
2	8	1	-	-	2	2	-	3	8	6	4	3	2	2	49	-	-	36	9	-	135	26.68%
3	-	-	1	-	1	-	-	-	-	-	-	-	-	-	4	-	-	18	8	-	32	6.32%
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	6	6	-	13	2.57%
5	-	-	-	-	-	-	-	-	1	-	-	-	-	-	6	1	-	5	4	-	17	3.36%
6	1	-	1	-	-	-	-	-	1	1	-	1	1	1	7	-	-	2	8	-	24	4.74%
7	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	4	1	-	6	1.19%
8	-	-	-	-	-	-	-	1	-	-	-	-	-	-	5	-	-	1	1	-	8	1.58%
9	-	-	-	-	-	-	-	1	-	2	-	-	-	-	4	-	-	-	-	-	7	1.38%
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	2	3	-	8	1.58%
11	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	3	-	-	4	0.79%
12	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	2	0.40%
sub-total	12	1	3	-	13	4	11	11	19	17	4	5	4	4	111	4	1	96	97	-	417	82.41%

TABLE 2 CON'T

ARTIFACT TYPE / LITHIC TYPE	triangular endblades	notched endblades	endblade fragments	ground stone lances	endblade preforms	bifaces with haft. mod.	bifaces without haft. "	biface preforms	dorsally mod. endscrap.	marginally ret. "	blade endscrapers	endscraper fragments	concave sidescrapers	unident. tool frags.	microblades & frags.	microblade cores/frags.	burin-like-tools	tip flute flakes	retouched/utiliz. flks.	hammerstones	Total	Percentage of Total
13	-	-	-	-	-	-	-	-	-	1	-	-	-	-	6	2	-	-	7	-	16	3.16%
14	-	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	1	3	-	6	1.19%
15	-	-	-	-	-	-	-	-	-	1	-	-	-	-	22	11	-	-	-	-	34	6.72%
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	24	24	4.74%
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	8	1.58%
19	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.20
Total	12	1	3	1	13	5	11	11	19	19	4	5	4	4	140	17	9	97	107	24	506	
Percentage of Total	2.37%	0.20%	0.59%	0.20%	2.57%	0.99%	2.17%	2.17%	3.75%	3.75%	0.79%	1.00%	0.79%	0.79%	27.67%	3.36%	1.78%	19.17%	21.15%	4.74%		100.00%

Table 3

Tool Assemblage, Areas 1 and 2

Middle Dorset Component

TABLE 3: TOOL ASSEMBLAGE, AREAS 1 AND 2 (MIDDLE DORSET COMPONENT)

ARTIFACT TYPE / LITHIC TYPE	triangular endblades	notched endblades	endblade fragments	ground stone lances	endblade preforms	bifaces with haft. mod.	bifaces without haft. "	biface preforms	dorsally mod. endscrap.	marginally ret. "	blade endscrapers	endscraper fragments	concave sidescrapers	unident. tool frags.	microblades & frags.	microblade cores/frags.	burin-like-tools	tip flute flakes	retouched/utiliz. flks.	hammerstones	Total	Percentage of Total
1	2	-	-	-	9	2	1	2	5	7	-	-	1	-	18	3	-	5	27	-	82	36.28%
2	4	-	-	-	1	1	-	2	3	1	3	-	-	-	17	-	-	4	3	-	39	17.26%
3	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	3	-	5	2.21%
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	5	2.21%
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	1	-	2	2	-	7	3.10%
6	1	-	1	-	-	-	-	-	1	1	-	-	-	-	5	-	-	-	6	-	15	6.64%
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	2	0.88%
8	-	-	-	-	-	-	-	1	-	-	-	-	-	-	4	-	-	-	-	-	5	2.21%
9	-	-	-	-	-	-	-	1	-	1	-	-	-	-	2	-	-	-	-	-	4	1.77%
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2	2	-	6	2.66%
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	2	0.88%
12	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	2	0.88%
sub-total	7	-	1	-	11	3	1	6	10	10	3	-	1	-	51	4	-	16	50	-	174	76.98%

TABLE 3 CON'T

ARTIFACT TYPE / LITHIC TYPE	triangular endblades	notched endblades	endblade fragments	ground stone lances	endblade preforms	bifaces with haft. mod.	bifaces without haft. "	biface preforms	dorsally mod. endscrap.	marginally ret. "	blade endscrapers	endscraper fragments	concave sidescrapers	unident. tool frags.	microblades & frags.	microblade cores/frags.	burin-like-tools	tip flute flakes	retouched/utiliz. flks.	hammerstones	Total	Percentage of Total
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	3	-	6	2.66%
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	3	-	5	2.21%
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	9	-	-	-	-	21	9.29%
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	13	5.75%
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	6	2.66%
19	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.44%
Total	7	-	1	1	11	3	1	6	10	10	3	-	1	-	67	13	6	17	56	13	226	99.99%
Percentage of Total	3.10%	0.00%	0.44%	0.44%	4.87%	1.33%	0.44%	2.66%	4.42%	4.42%	1.33%	0.00%	0.44%	0.00%	29.65%	5.75%	2.66%	7.52%	24.78%	5.75%	100.00%	

Table 4

Tool Assemblage, Area 3

Middle Dorset Component

TABLE 4: TOOL ASSEMBLAGE, AREA 3 (MIDDLE DORSET COMPONENT)

ARTIFACT TYPE / LITHIC TYPE	triangular endblades	notched endblades	endblade fragments	ground stone lances	endblade preforms	bifaces with haft. mod.	bifaces without haft. "	biface preforms	dorsally mod. endscrap.	marginally ret. "	blade endscrapers	endscraper fragments	concave sidescrapers	unident. tool frags.	microblades & frags.	microblade cores/frags.	burin-like-tools	tip flute flakes	retouched/utiliz. flks.	hammerstones	Total	Percentage of Total
1	1	-	1	-	1	-	10	2	3	1	-	1	-	1	14	-	1	14	29	-	79	28.21%
2	4	1	-	-	1	1	-	1	5	5	1	3	2	2	32	-	-	32	6	-	96	34.29%
3	-	-	1	-	-	-	-	-	-	-	-	-	-	-	3	-	-	18	5	-	27	9.64%
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	6	1	-	8	2.86%
5	-	-	-	-	-	-	-	-	1	-	-	-	-	-	4	-	-	3	2	-	10	3.57%
6	-	-	-	-	-	-	-	-	-	-	-	1	1	1	2	-	-	2	2	-	9	3.21%
7	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	3	-	-	4	1.43%
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	3	1.07%
9	-	-	-	-	-	-	-	-	-	1	-	-	-	-	2	-	-	-	-	-	3	1.07%
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1	-	2	0.71%
11	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	2	0.71%
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
sub-total	5	1	2	-	2	1	10	5	9	7	1	5	3	4	60	-	1	80	47	-	243	86.77%

TABLE 4 CON'T

ARTIFACT TYPE / LITHIC TYPE	triangular endblades	notched endblades	endblade fragments	ground stone lances	endblade preforms	bifaces with haft. mod.	bifaces without haft. mod.	biface preforms	dorsally mod. endscrapers	marginally ret. endscrapers	blade endscrapers	endscraper fragments	concave sidescrapers	unidentifiable tool frags.	microblades & fragments	microblade cores/frags.	burin-like-tools	tip flute flakes	retouched/utilized flakes	hammerstones	Total	Percentage of Total
13	-	-	-	-	-	-	-	-	-	1	-	-	-	-	3	2	-	-	4	-	10	3.57%
14	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0.36%
15	-	-	-	-	-	-	-	-	-	1	-	-	-	-	10	2	-	-	-	-	13	4.64%
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	11	3.93%
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	2	0.71%
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
Total	5	1	2	-	2	2	10	5	9	9	1	5	3	4	73	4	3	80	51	11	280	99.98%
Percentage of Total	1.79%	0.36%	0.71%	0.00%	0.71%	0.71%	3.57%	1.79%	3.21%	3.21%	0.36%	1.79%	1.07%	1.43%	26.07%	1.43%	1.07%	28.57%	18.21%	3.93%	99.99%	

Table 5

Combined Debitage Assemblage from Broom Point

TABLE 5: COMBINED DEBITAGE FROM BROOM POINT (DlBl-1)

LITHIC TYPE \ FLAKE TYPE	Cores and Core Frags	PD	SD	Secondary	BS	NID	R/R	Total	Percentage of Total
1. opaque CH chert	67	190	91	753	909	437	4217	6664	67.19%
2. transl CH chert	4	46	17	93	38	65	1630	1893	19.09%
3. grainy grey chert	1	1	11	38	7	8	719	785	7.91%
4. opaque green chert	2	1	-	3	-	3	183	192	1.94%
5. light grey chert	1	1	1	5	1	-	15	24	0.24%
6. blue-grey chert	2	2	-	3	11	3	40	61	0.62%
7. opaque red chert	-	-	-	3	-	-	20	23	0.23%
8. mottled grey chert	2	4	1	23	7	12	59	108	1.09%
9. slate-like chert	-	-	-	11	-	2	12	25	0.25%
10. opaque brown chert	2	1	-	5	3	-	4	15	0.15%
11. grey-green chert	-	-	-	3	-	-	92	95	0.96%
14. Ramah chert (nonlocal)	-	-	-	1	-	-	4	5	0.05%
15. quartz crystal	1	-	-	-	15	-	8	24	0.24%
16. fine-grained quartzite	-	1	-	-	2	1	-	4	0.04%
Total	82	247	121	941	993	531	7003	9918	
Percentage of Total	0.83%	2.49%	1.22%	9.49%	10.01%	5.35%	70.61%		100.00%

Table 6

Debitage Assemblage, Areas 1 and 2

TABLE 6: BROOM POINT DEBITAGE, AREAS 1 AND 2

LITHIC TYPE / FLAKE TYPE	Cores and Core Frags	PD	SD	Secondary	BS	NID	R/R	Total	Percentage of Total
1. opaque CH chert	30	80	22	399	391	157	1369	2448	97.76%
2. transl CH chert	-	-	-	1	-	-	-	1	0.04%
3. grainy grey chert	-	-	-	-	-	-	-	-	0.00%
4. opaque green chert	-	-	-	1	-	-	-	1	0.04%
5. light grey chert	-	-	-	-	-	-	-	-	0.00%
6. blue-grey chert	-	-	-	1	-	-	-	1	0.04%
7. opaque red chert	-	-	-	-	-	-	-	-	0.00%
8. mottled grey chert	2	-	-	9	5	1	15	32	1.28%
9. slate-like chert	-	-	-	-	-	-	-	-	0.00%
10. opaque brown chert	1	-	-	4	-	-	3	8	0.32%
11. grey-green chert	-	-	-	-	-	-	2	2	0.08%
14. Ramah chert (nonlocal)	-	-	-	1	-	-	3	4	0.16%
15. quartz crystal	-	-	-	-	3	-	4	7	0.28%
16. fine-grained quartzite	-	-	-	-	-	-	-	-	0.00%
Total	33	80	22	416	399	158	1396	2504	
Percentage of Total	1.32%	3.20%	0.88%	16.61%	15.93%	6.31%	55.75%		100.00%

Table 7

Debitage Assemblage, Area 3

TABLE 7: BROOM POINT DEBITAGE, AREA 3

LITHIC TYPE \ FLAKE TYPE	Cores and Core Frags	PD	SD	Secondary	BS	NID	R/R	Total	Percentage of Total
1. opaque CH chert	37	110	69	354	518	280	2848	4216	56.87%
2. transl CH chert	4	46	17	92	38	65	1630	1892	25.52%
3. grainy grey chert	1	1	11	38	7	8	719	785	10.59%
4. opaque green chert	2	1	-	2	-	3	183	191	2.58%
5. light grey chert	1	1	1	5	1	-	15	24	0.32%
6. blue-grey chert	2	2	-	2	11	3	40	60	0.81%
7. opaque red chert	-	-	-	3	-	-	20	23	0.31%
8. mottled grey chert	-	4	1	14	2	11	44	76	1.03%
9. slate-like chert	-	-	-	11	-	2	12	25	0.34%
10. opaque brown chert	1	1	-	1	3	-	1	7	0.09%
11. grey-green chert	-	-	-	3	-	-	90	93	1.25%
14. Ramah chert (nonlocal)	-	-	-	-	-	-	1	1	0.01%
15. quartz crystal	1	-	-	-	12	-	4	17	0.23%
16. fine-grained quartzite	-	1	-	-	2	1	-	4	0.05%
Total	49	167	99	525	594	373	5607	7414	
Percentage of Total	0.66%	2.25%	1.34%	7.08%	8.01%	5.03%	75.63%		100.00%

Figure 1

The west coast of Newfoundland's Great Northern Peninsula, showing the location of Middle Dorset sites and other place names mentioned in the text

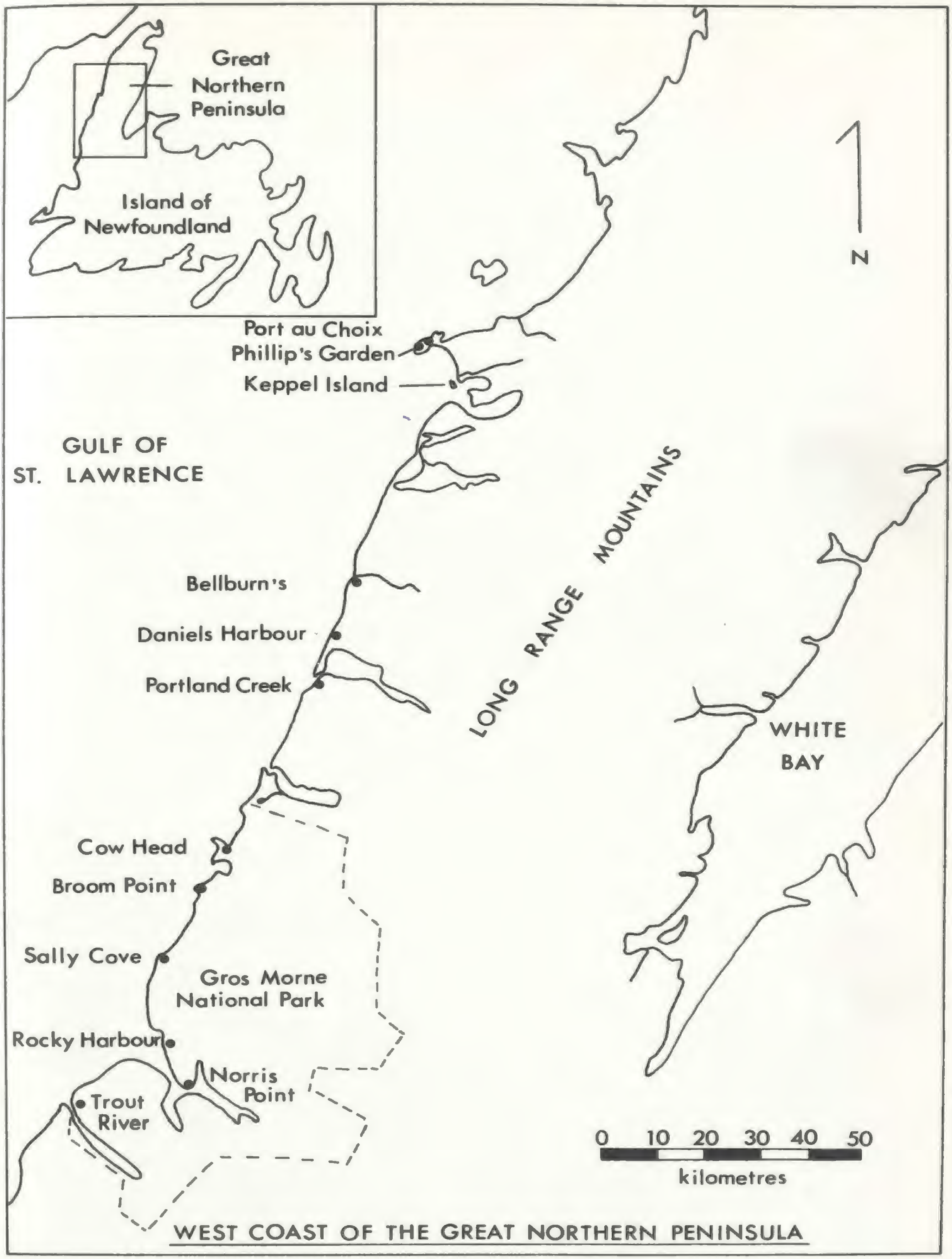

Great
Northern
Peninsula
Island of
Newfoundland
N
Port au Choix
Phillip's Garden
Keppel Island
GULF OF
ST. LAWRENCE
LONG RANGE MOUNTAINS
Bellburn's
Daniels Harbour
Portland Creek
WHITE
BAY
Cow Head
Broom Point
Sally Cove
Gros Morne
National Park
Rocky Harbour
Norris
Point
Trout
River
0 10 20 30 40 50
kilometres
WEST COAST OF THE GREAT NORTHERN PENINSULA

FIGURE 1

Figure 2

The Broom Point headland, showing the location of the Broom Point site (DlBl-1)

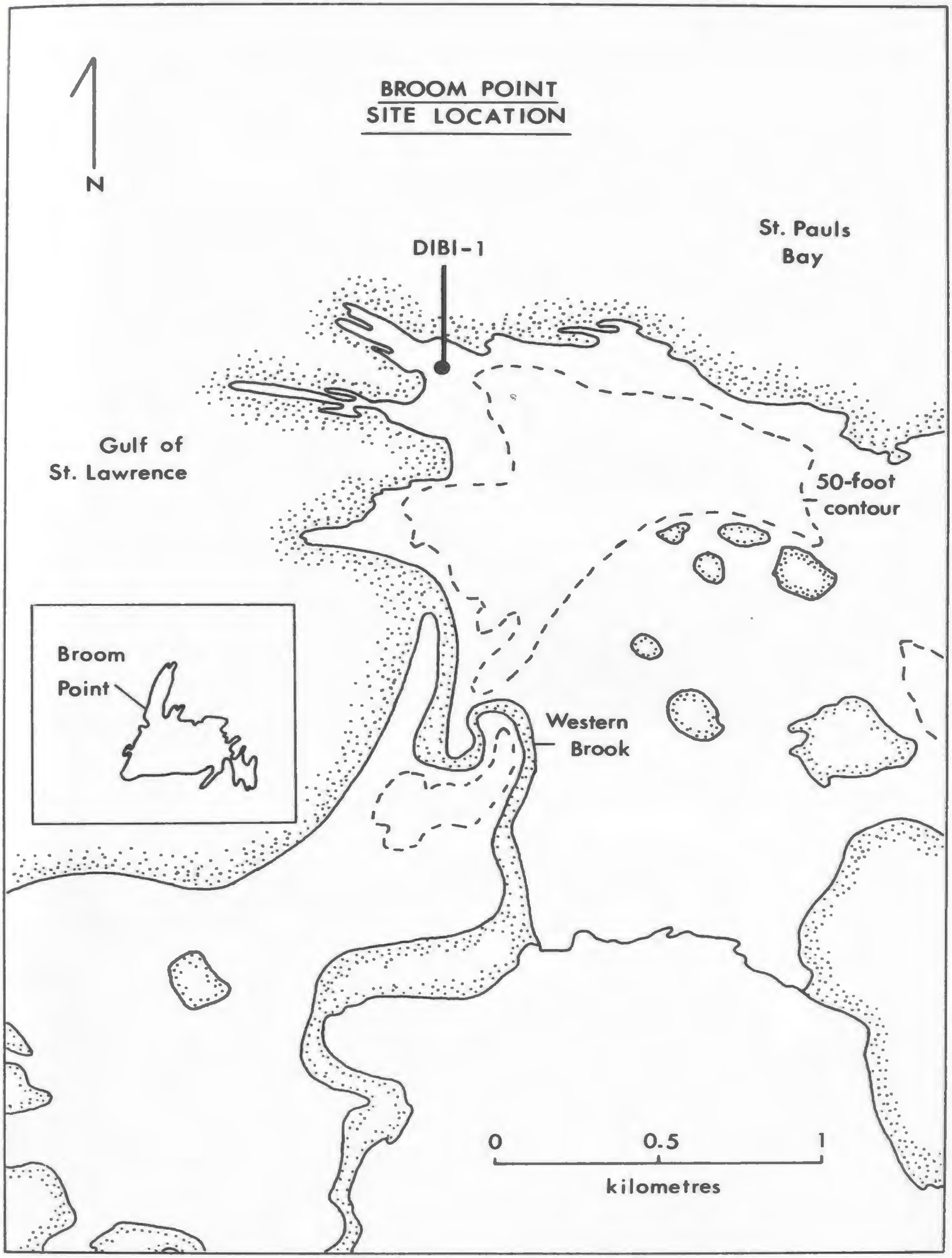

BROOM POINT
SITE LOCATION
N
DIBI-1
St. Pauls
Bay
Gulf of
St. Lawrence
50-foot
contour
Broom
Point
Western
Brook
0
0.5
1
kilometres

FIGURE 2

Figure 3

Broom Point (DlBl-1) plan of excavations

BROOM POINT (DIBI-1)

PLAN OF EXCAVATIONS

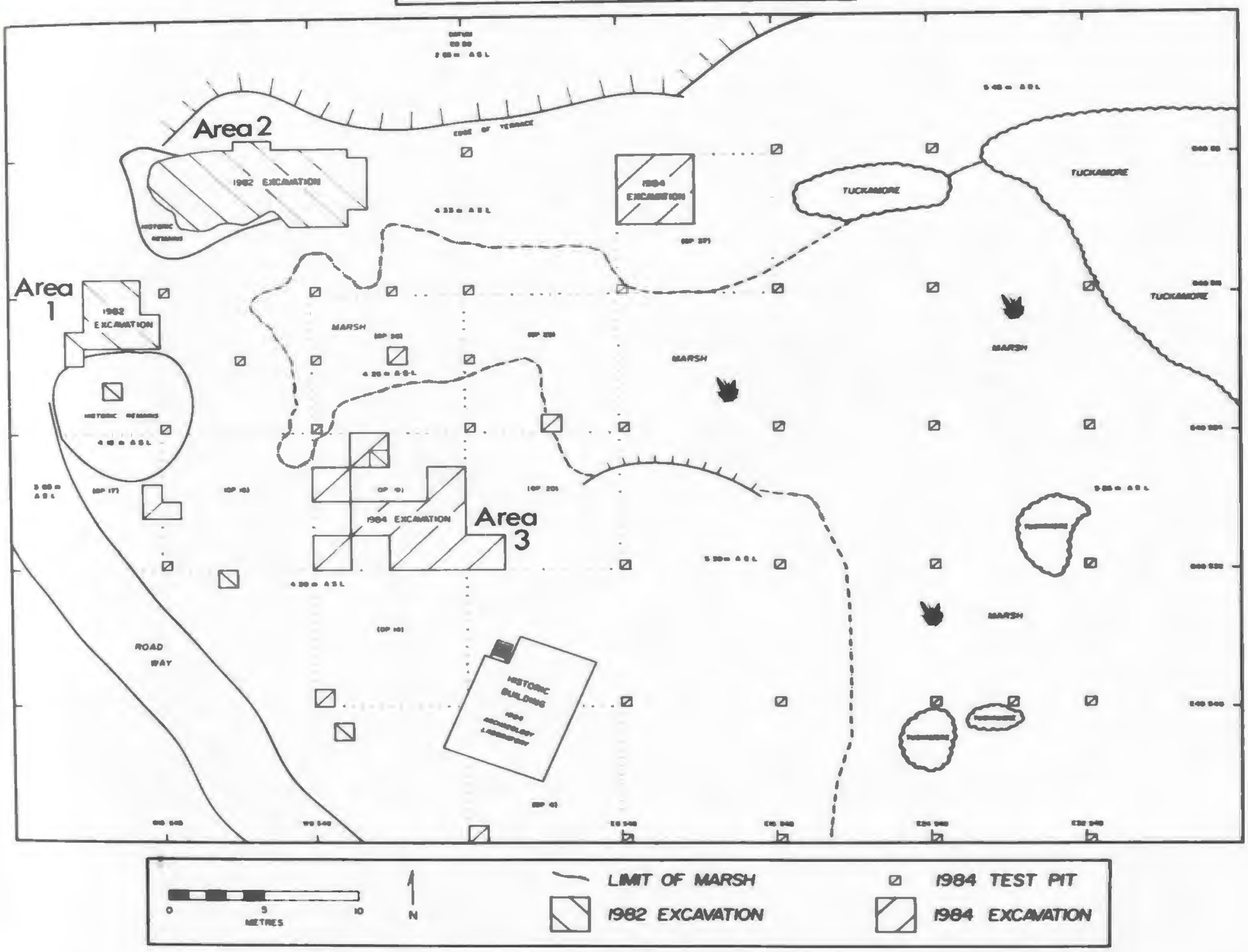


FIGURE 3

Figure 4

Broom Point (D1B1-1) soil profiles

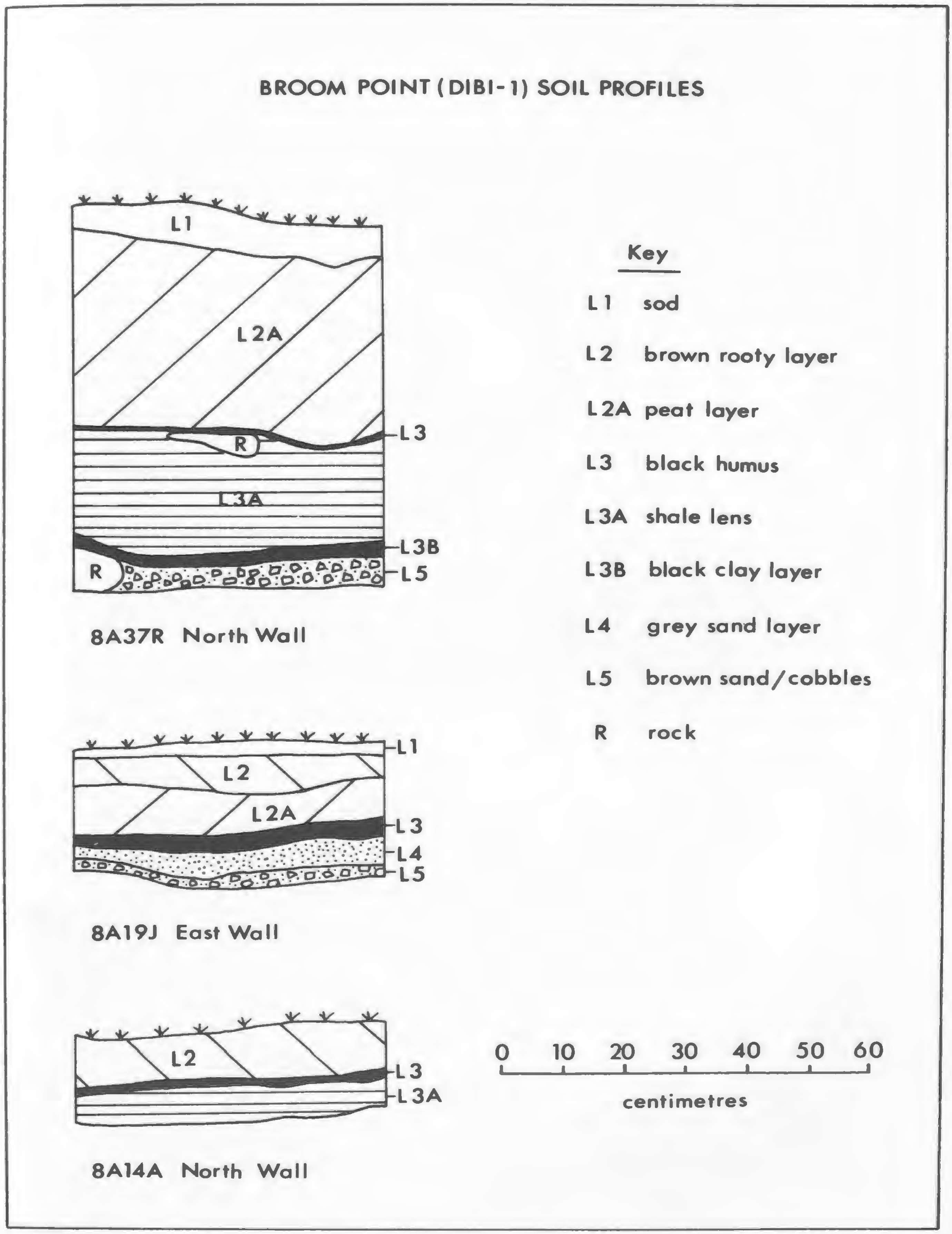

BROOM POINT (DIBI-1) SOIL PROFILES
L1
L2A
R
L3
L3A
L3B
R
L5
8A37R North Wall
Key
L1 sod
L2 brown rooty layer
L2A peat layer
L3 black humus
L3A shale lens
L3B black clay layer
L4 grey sand layer
L5 brown sand/cobbles
R rock
L1
L2
L2A
L3
L4
L5
8A19J East Wall
L2
L3
L3A
8A14A North Wall
0 10 20 30 40 50 60
centimetres

FIGURE 4

Figure 5

Artifact distributions, Area 3 (Operation 19)

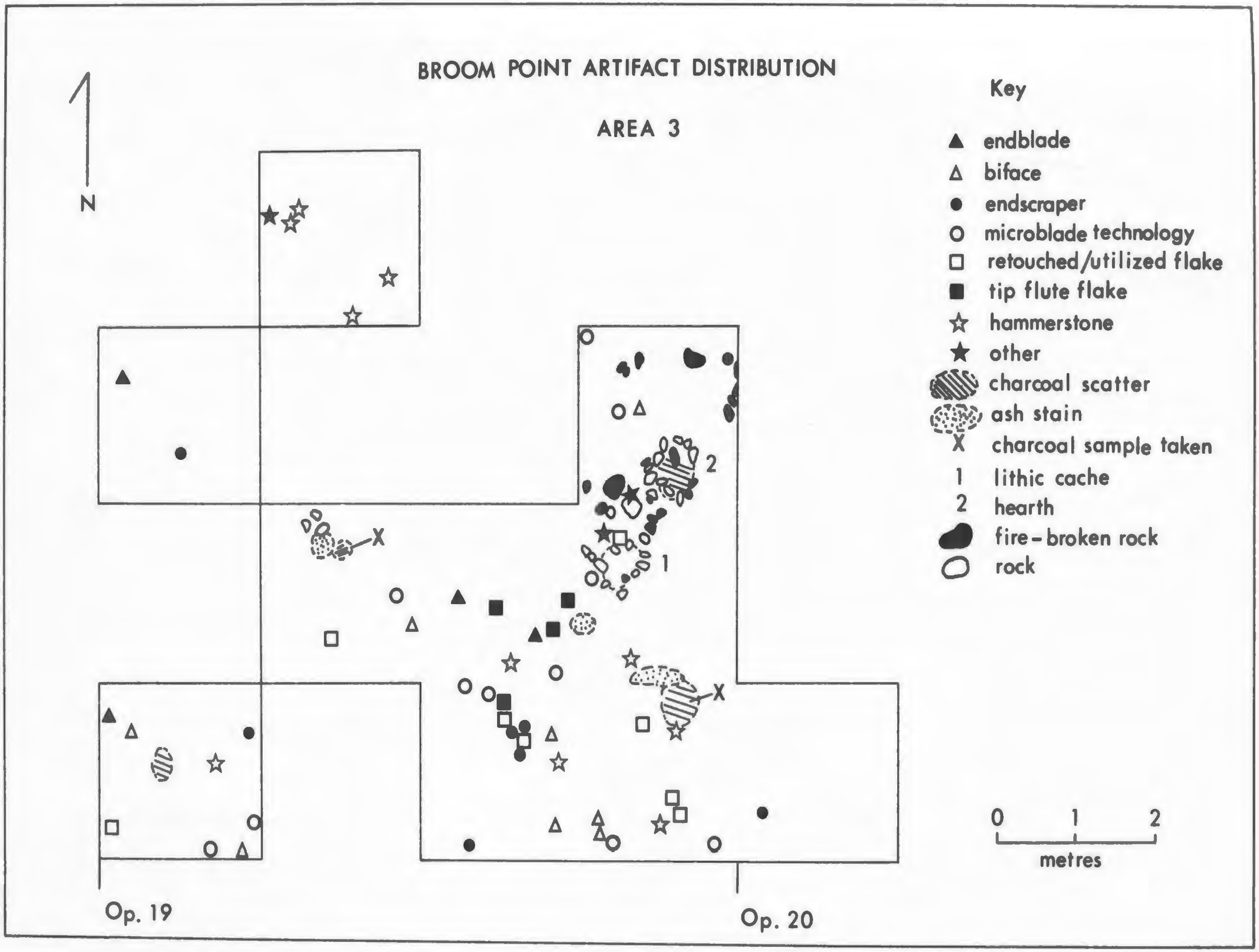

BROOM POINT ARTIFACT DISTRIBUTION
AREA 3
N
Key
endblade
biface
endscraper
microblade technology
retouched/utilized flake
tip flute flake
hammerstone
other
charcoal scatter
ash stain
X charcoal sample taken
1 lithic cache
2 hearth
fire-broken rock
rock
X
1
2
X
0 1 2
metres
Op. 19
Op. 20

FIGURE 5

Figure 6

Debitage distribution, Areas 1 and 2

opaque Cow Head chert (lithic type 1)

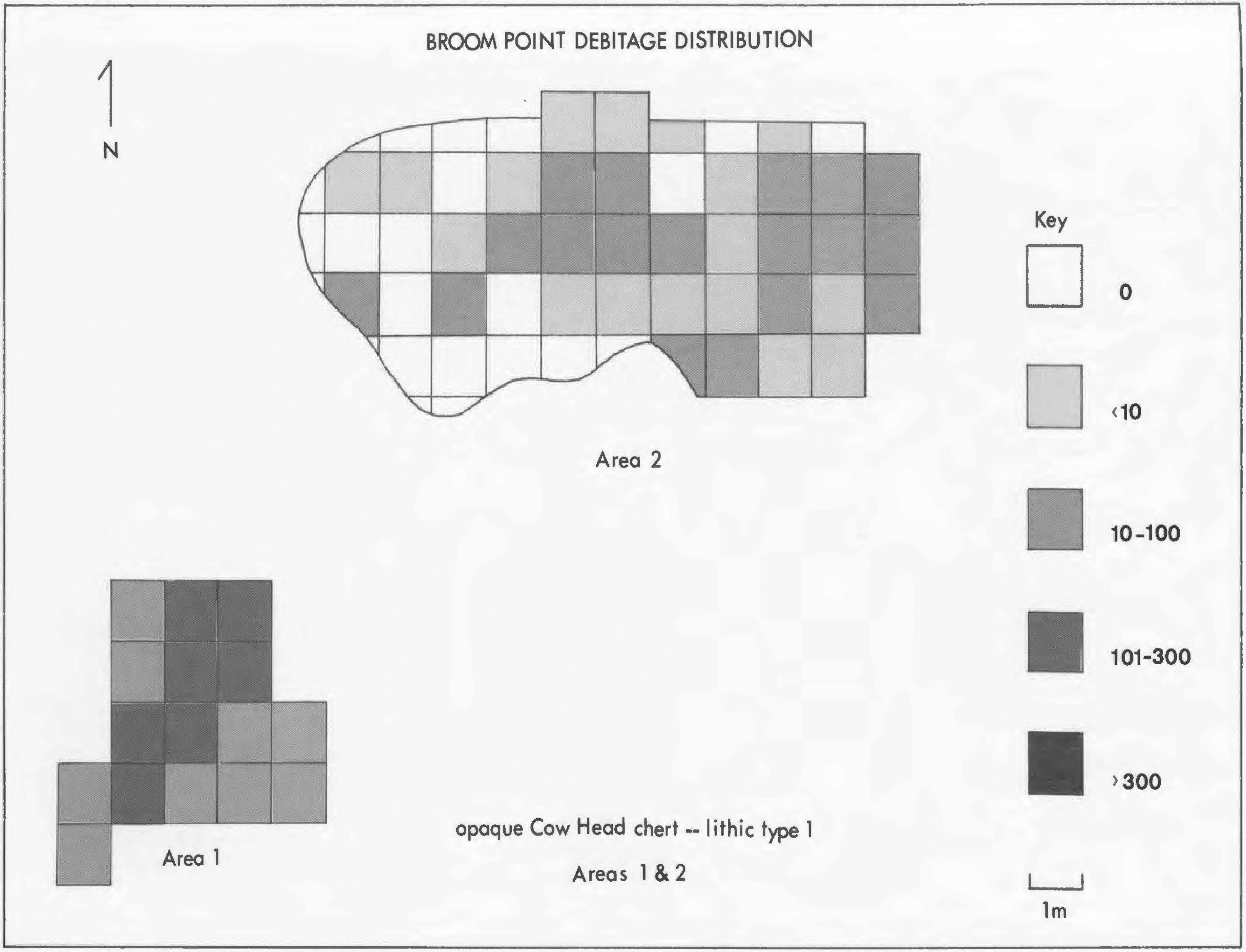

BROOM POINT DEBITAGE DISTRIBUTION
N
Area 2
Key
0
‹10
10-100
101-300
›300
Area 1
opaque Cow Head chert -- lithic type 1
Areas 1 & 2
1m

Figure 7

<u>Debitage distribution, Area 3</u>

opaque Cow Head chert (lithic type 1)

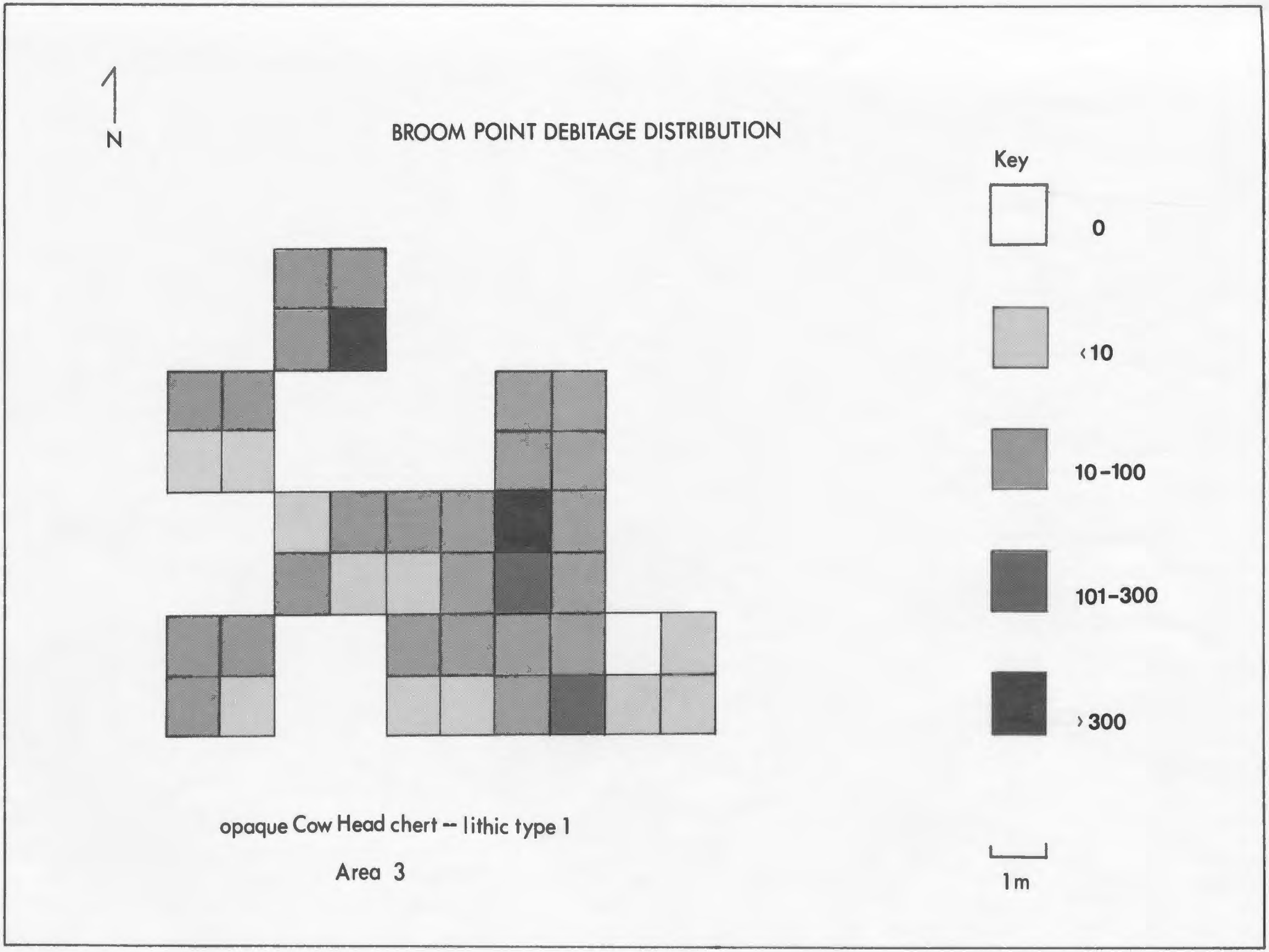

N
BROOM POINT DEBITAGE DISTRIBUTION
Key
0
‹10
10-100
101-300
›300
opaque Cow Head chert -- lithic type 1
Area 3
1m

Figure 8

Debitage distribution, Areas 1 and 2

translucent Cow Head chert (lithic type 2)

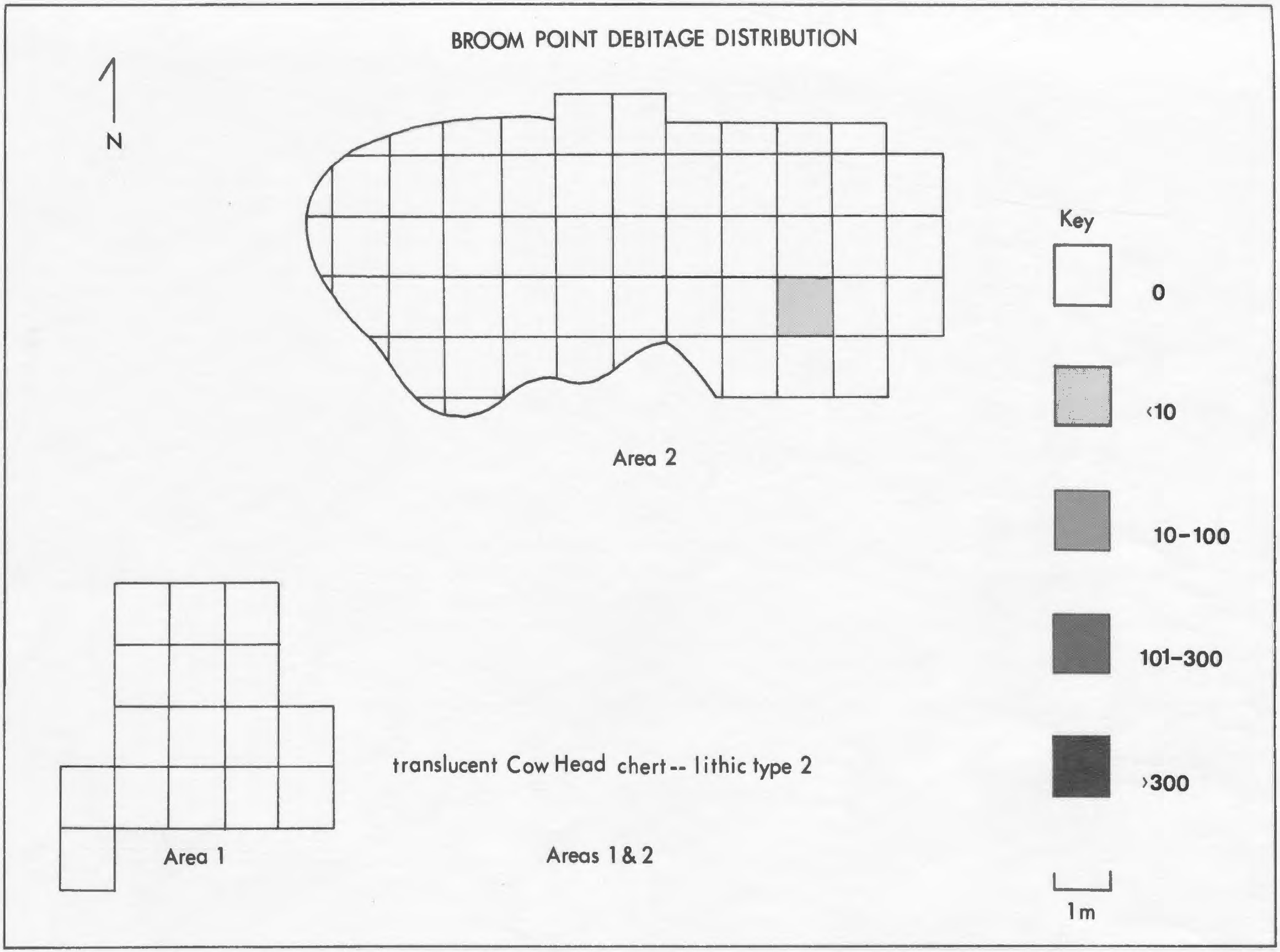

BROOM POINT DEBITAGE DISTRIBUTION
N
Area 2
Key
0
‹10
10–100
101–300
›300
translucent Cow Head chert -- lithic type 2
Area 1
Areas 1 & 2
1 m

Figure 9

Debitage distribution, Area 3

translucent Cow Head chert (lithic type 2)

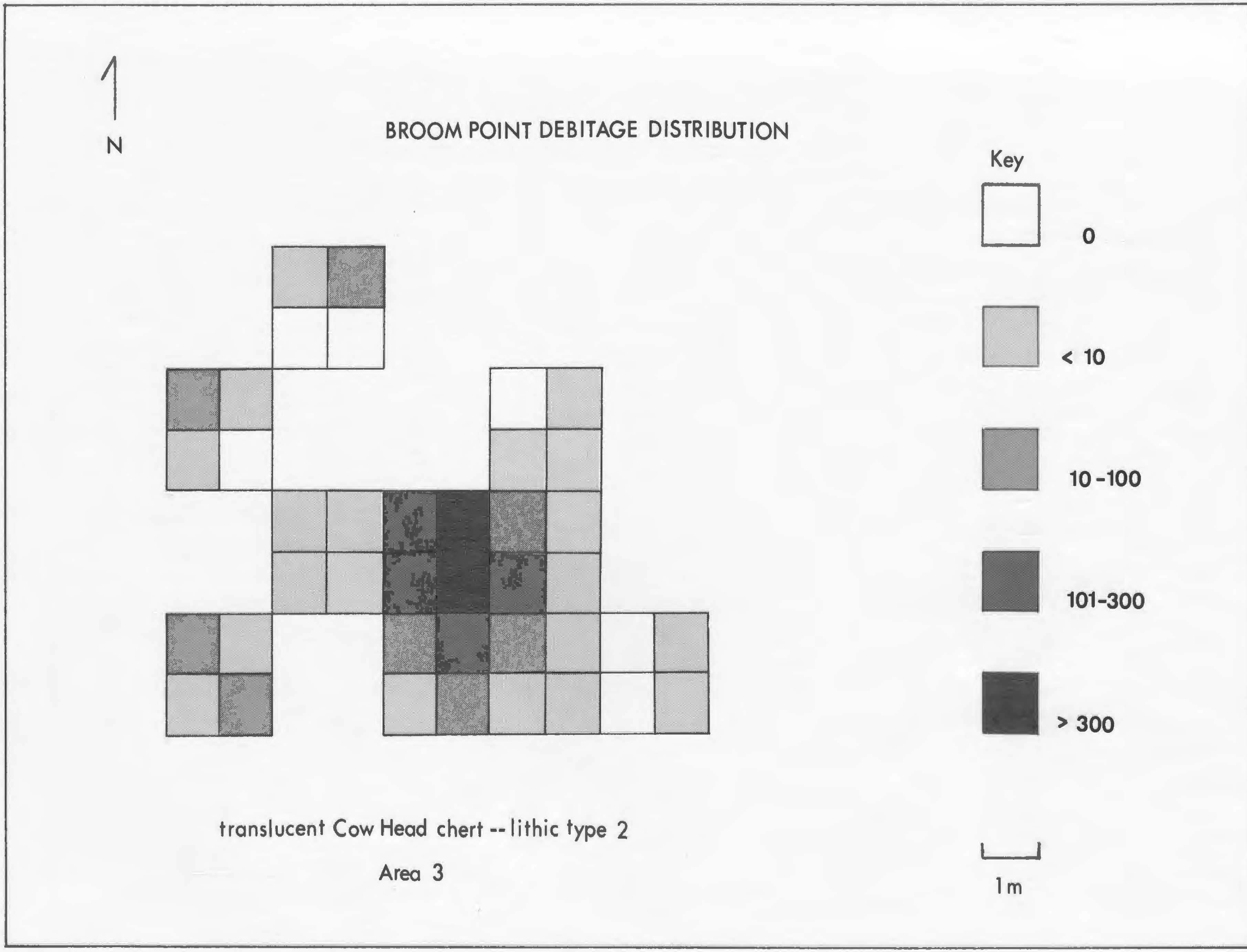

N
BROOM POINT DEBITAGE DISTRIBUTION
Key
0
< 10
10 - 100
101-300
> 300
1 m
translucent Cow Head chert -- lithic type 2
Area 3

Figure 10

<u>Debitage distribution, Areas 1 and 2</u>

grainy grey chert (lithic type 3)

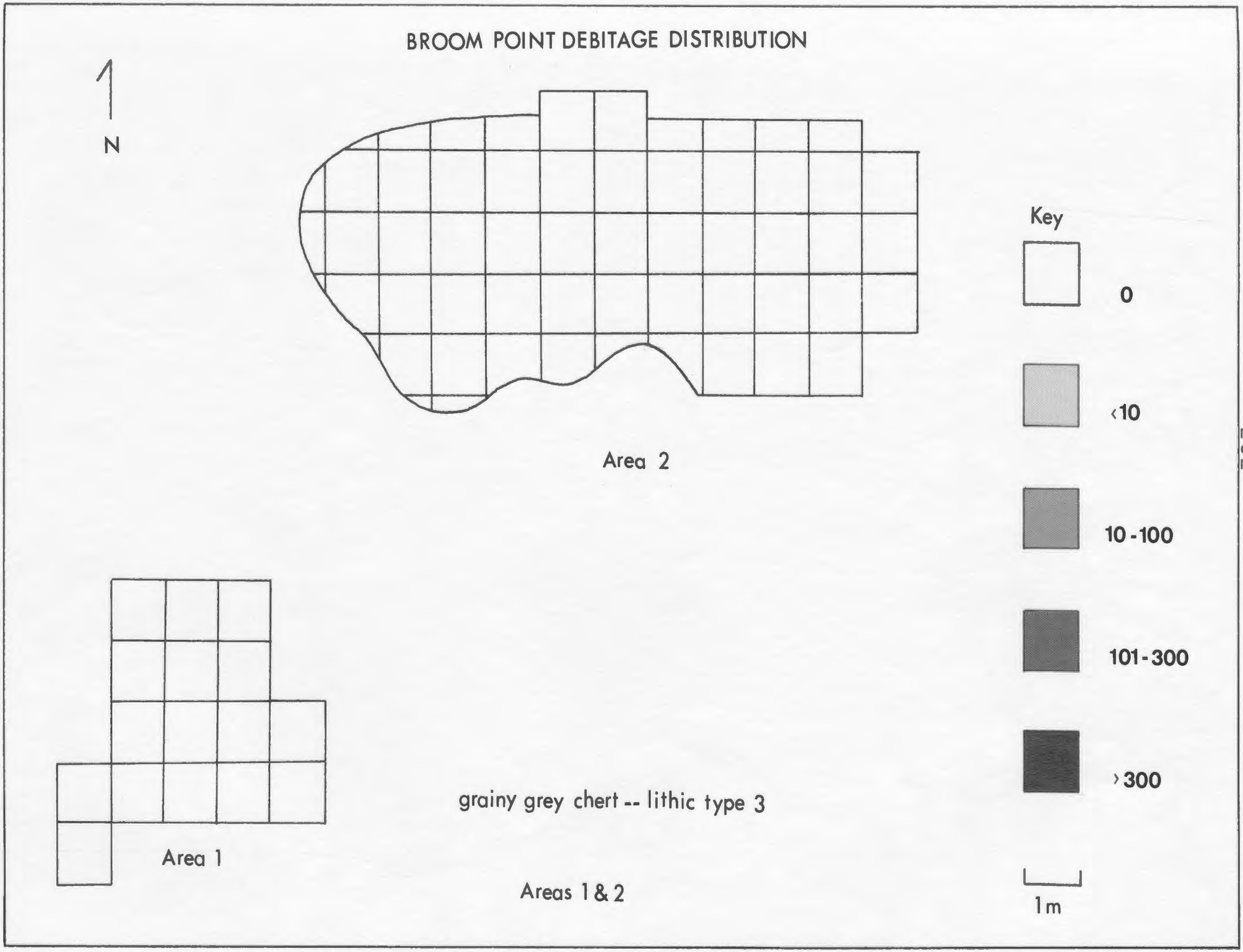

BROOM POINT DEBITAGE DISTRIBUTION
N
Area 2
Key
0
‹10
10 - 100
101 - 300
› 300
grainy grey chert -- lithic type 3
Area 1
Areas 1 & 2
1 m

Figure 11

<u>Debitage distribution, Area 3</u>

grainy grey chert (lithic type 3)

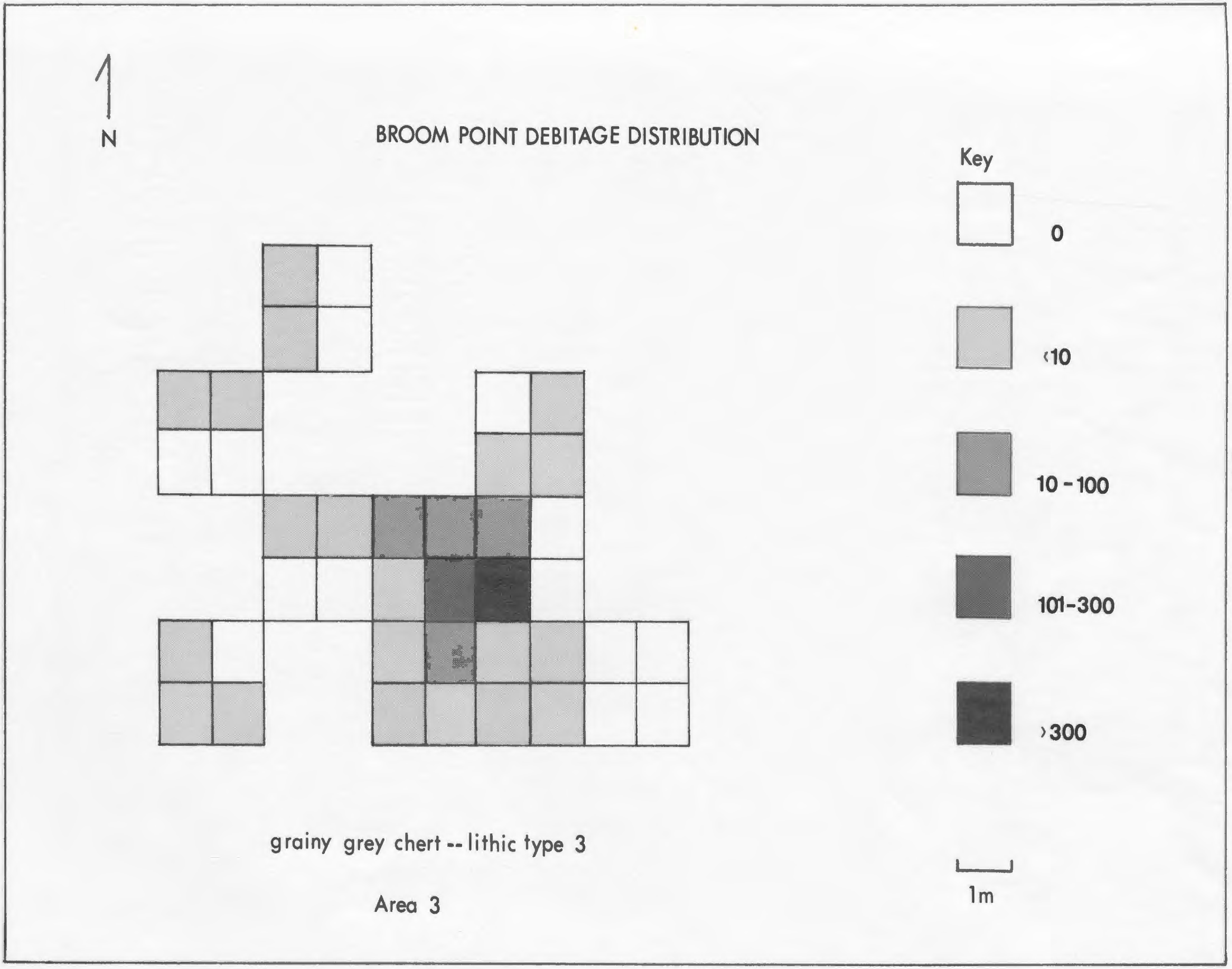

N
BROOM POINT DEBITAGE DISTRIBUTION
Key
0
‹10
10 - 100
101-300
›300
grainy grey chert -- lithic type 3
Area 3
1m

Figure 12

Debitage distribution, Areas 1 and 2

opaque green chert (lithic type 4)

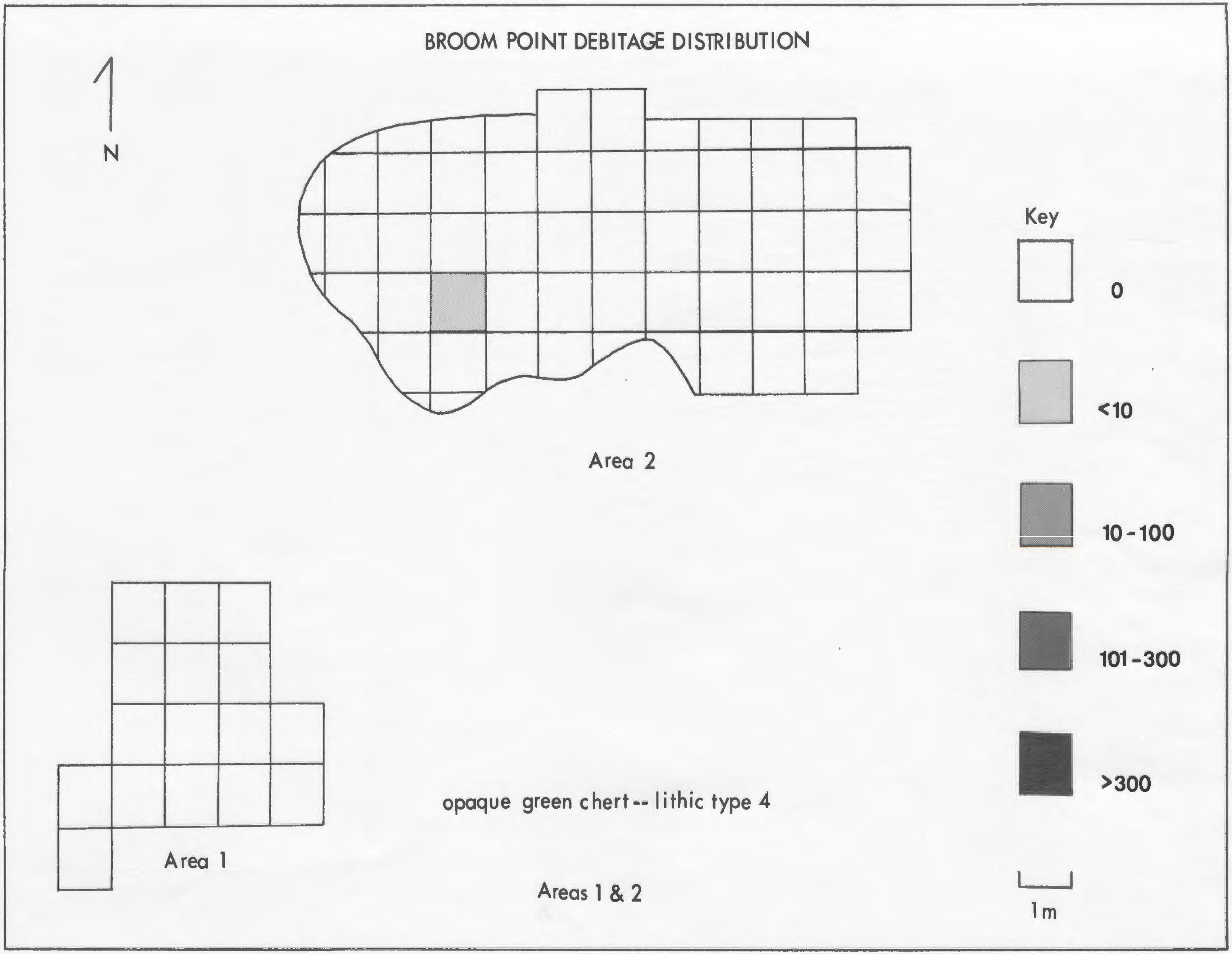

BROOM POINT DEBITAGE DISTRIBUTION
N
Area 2
Key
0
<10
10 - 100
101 - 300
>300
Area 1
opaque green chert -- lithic type 4
Areas 1 & 2
1 m

Figure 13

Debitage distribution, Area 3

opaque green chert (lithic type 4)

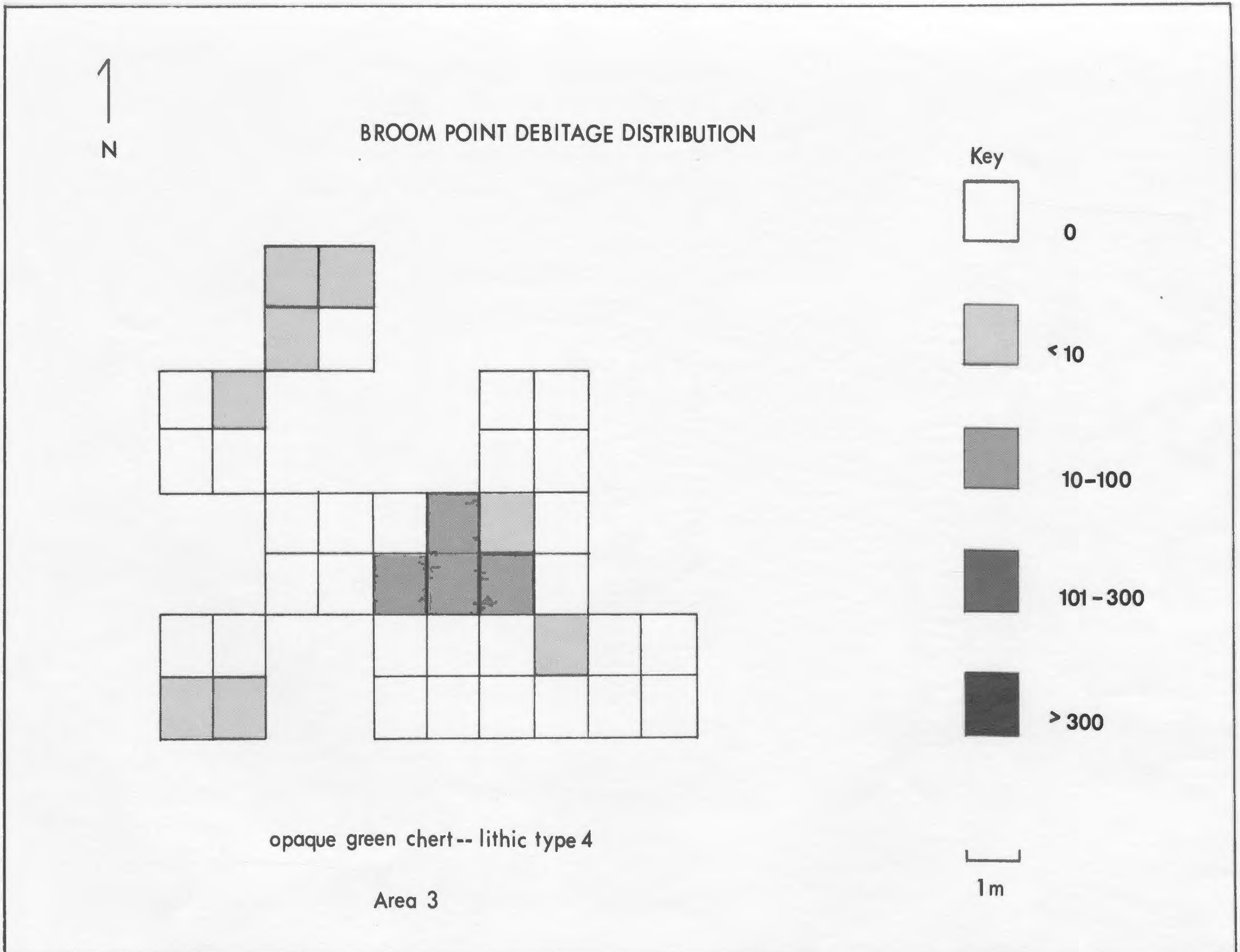

N
BROOM POINT DEBITAGE DISTRIBUTION
Key
0
< 10
10-100
101 - 300
> 300
opaque green chert -- lithic type 4
Area 3
1 m

Figure 14

Debitage distribution, Areas 1 and 2

mottled grey chert (lithic type 8)

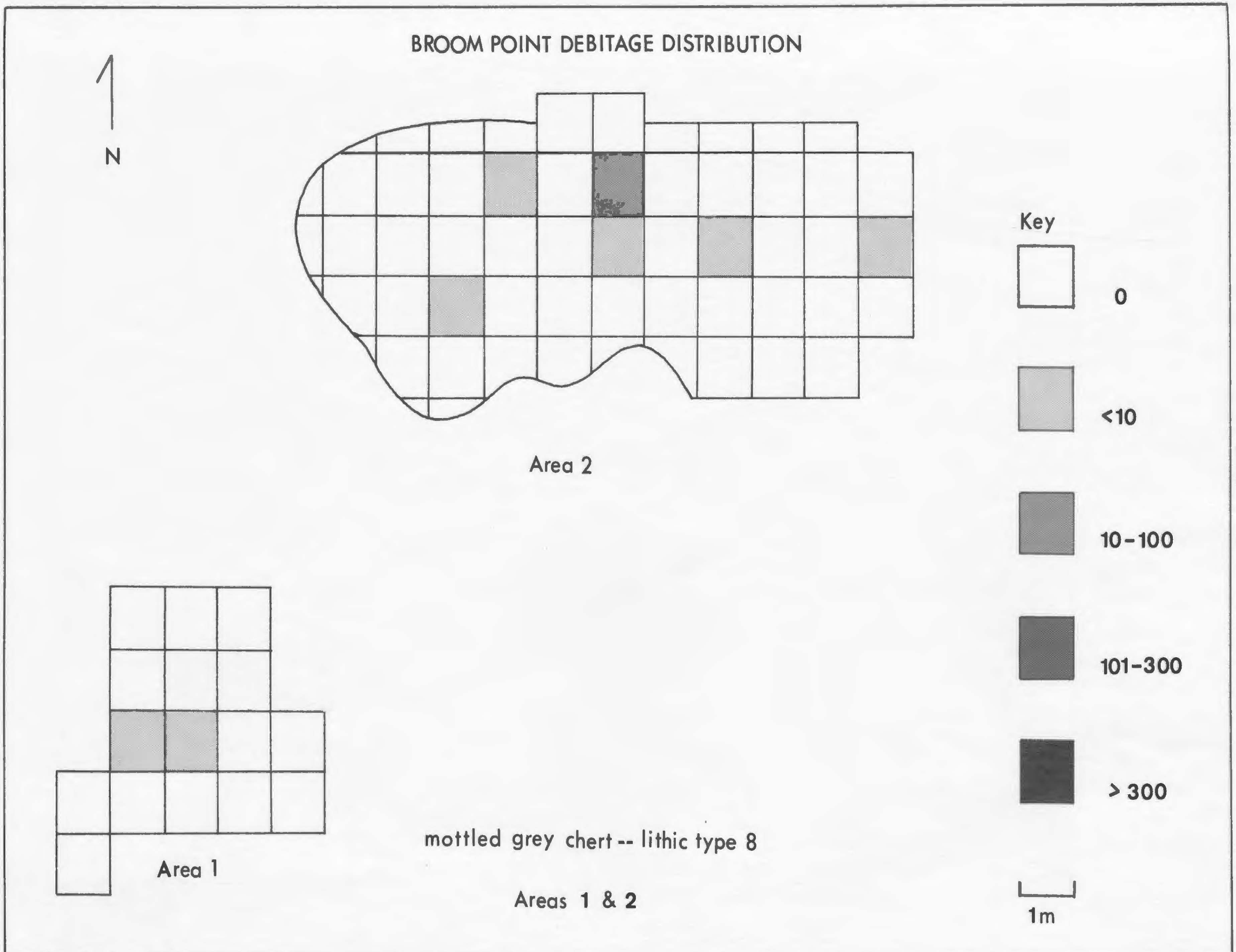

BROOM POINT DEBITAGE DISTRIBUTION
N
Area 2
Area 1
Key
0
<10
10-100
101-300
> 300
1m
mottled grey chert -- lithic type 8
Areas 1 & 2

Figure 15

Debitage distribution, Area 3

mottled grey chert (lithic type 8)

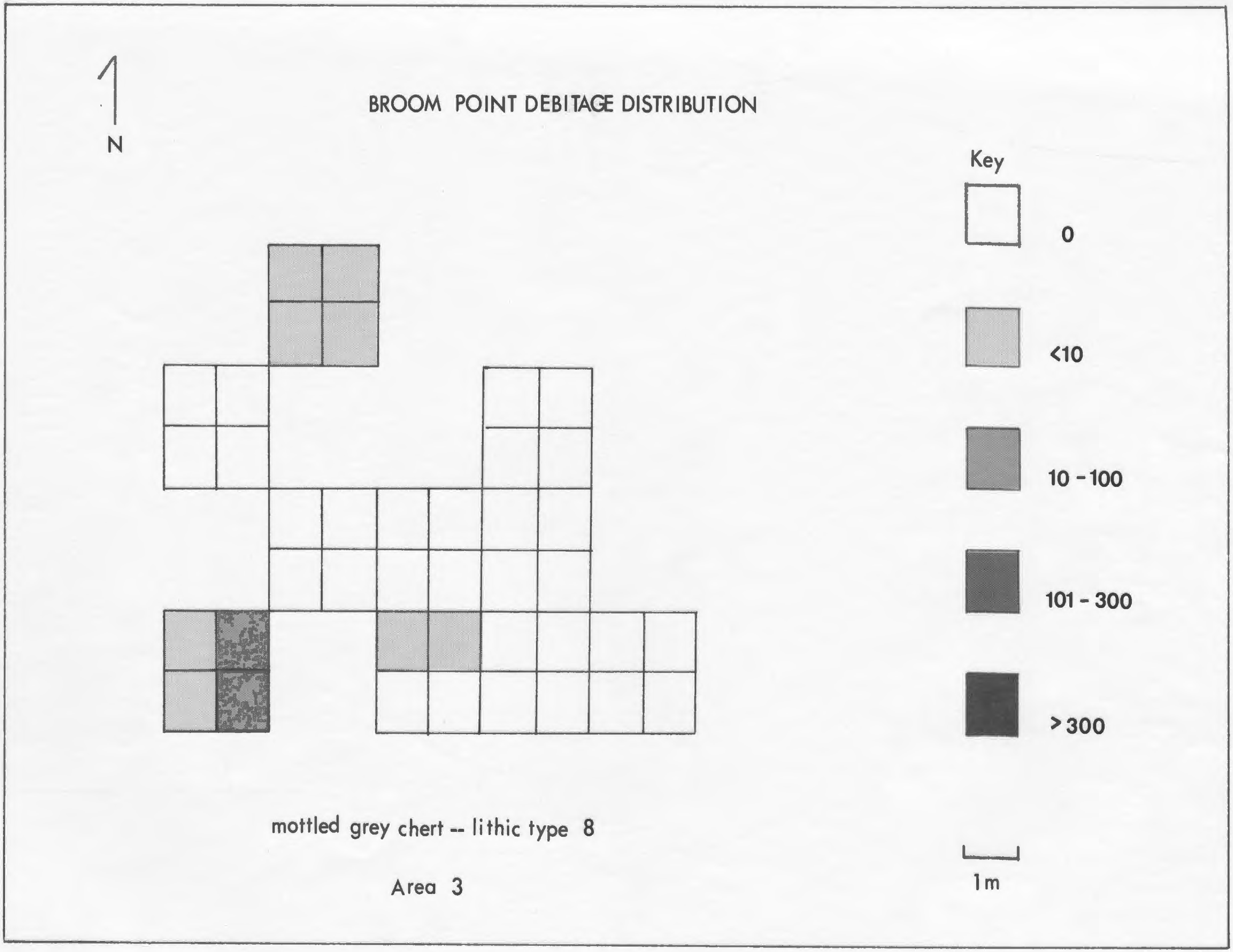

N
BROOM POINT DEBITAGE DISTRIBUTION
Key
0
<10
10 - 100
101 - 300
> 300
mottled grey chert -- lithic type 8
Area 3
1m

Figure 16

<u>Debitage distribution, Areas 1 and 2</u>

other lithic types

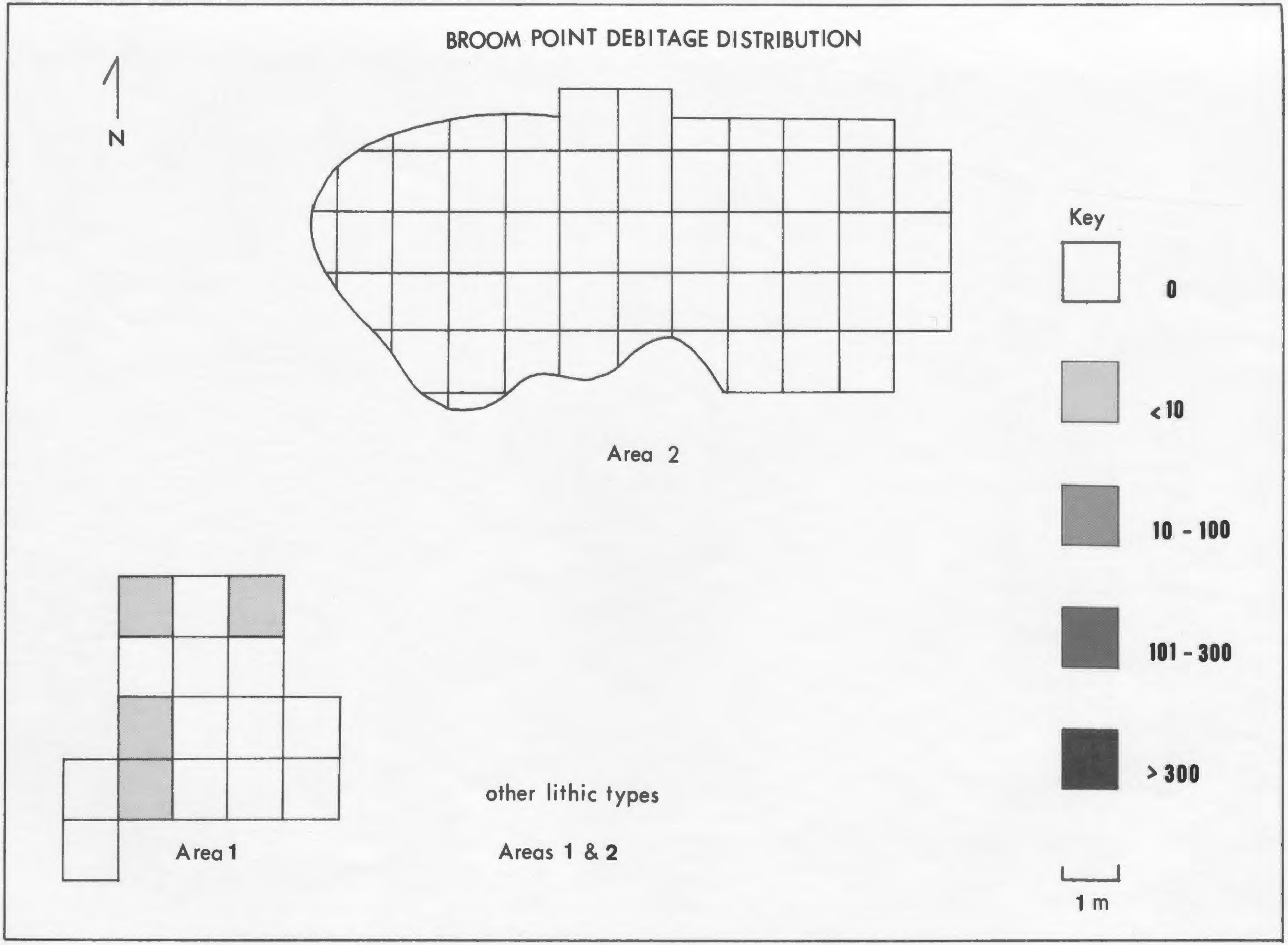

BROOM POINT DEBITAGE DISTRIBUTION
N
Area 2
Key
0
< 10
10 - 100
101 - 300
> 300
1 m
Area 1
other lithic types
Areas 1 & 2

Figure 17

Debitage distribution, Area 3

other lithic types

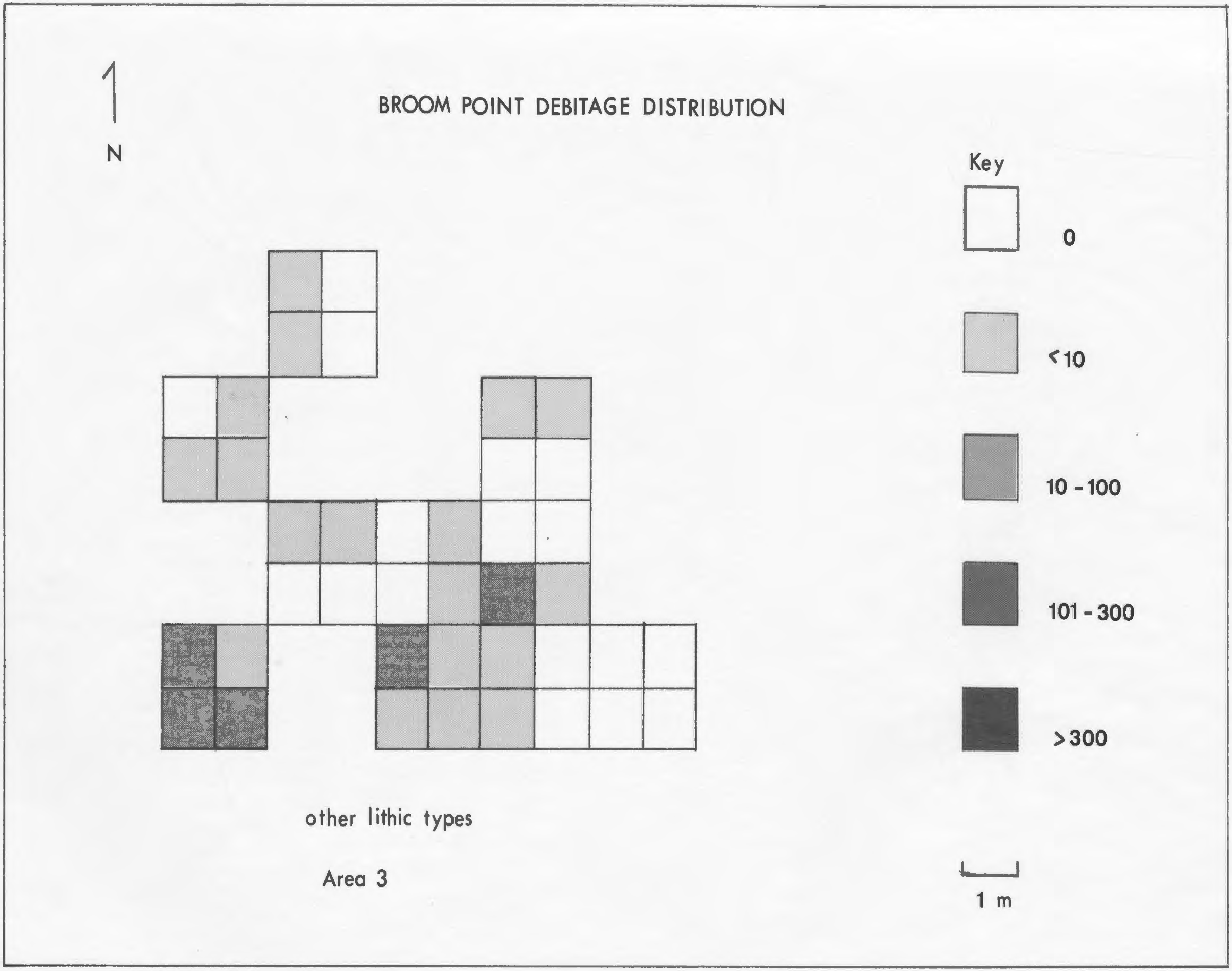

N
BROOM POINT DEBITAGE DISTRIBUTION
Key
0
<10
10 - 100
101 - 300
>300
other lithic types
Area 3
1 m

Figure 18

The Broom Point site (DlBl-1) as viewed from Highway 430, to the south of the Broom Point headland

FIGURE 18

Figure 19

View to the southwest of the Broom Point site (D1B1-1), showing the location of a small Palaeo-Eskimo site on the next promontory and the Long Range Mountains in the background

FIGURE 19

Figure 20

Overview of Operation 19, Area 3

The Broom Point site (DlBl-1)

FIGURE 20

Figure 21

Hearth feature located in Operation 19, Area 3

The Broom Point site (DlBl-1)


Broom Point
8A19A10
S.E. Quad, Level 4
Feature 1
20 Aug. '84
2 cm DBS

FIGURE 21

Figure 22

<u>Endblades and Tip Flute Flakes</u>

a-i triangular harpoon endblades

j notched endblade

k-m reworked endblades

n ground slate lance

o-r matching pairs of tip flute flakes (both left primary - right secondary combinations)

FIGURE 22

Figure 23

<u>Endblade Preforms</u>

a-h roughly triangular endblade preforms

i-l notched endblade preforms

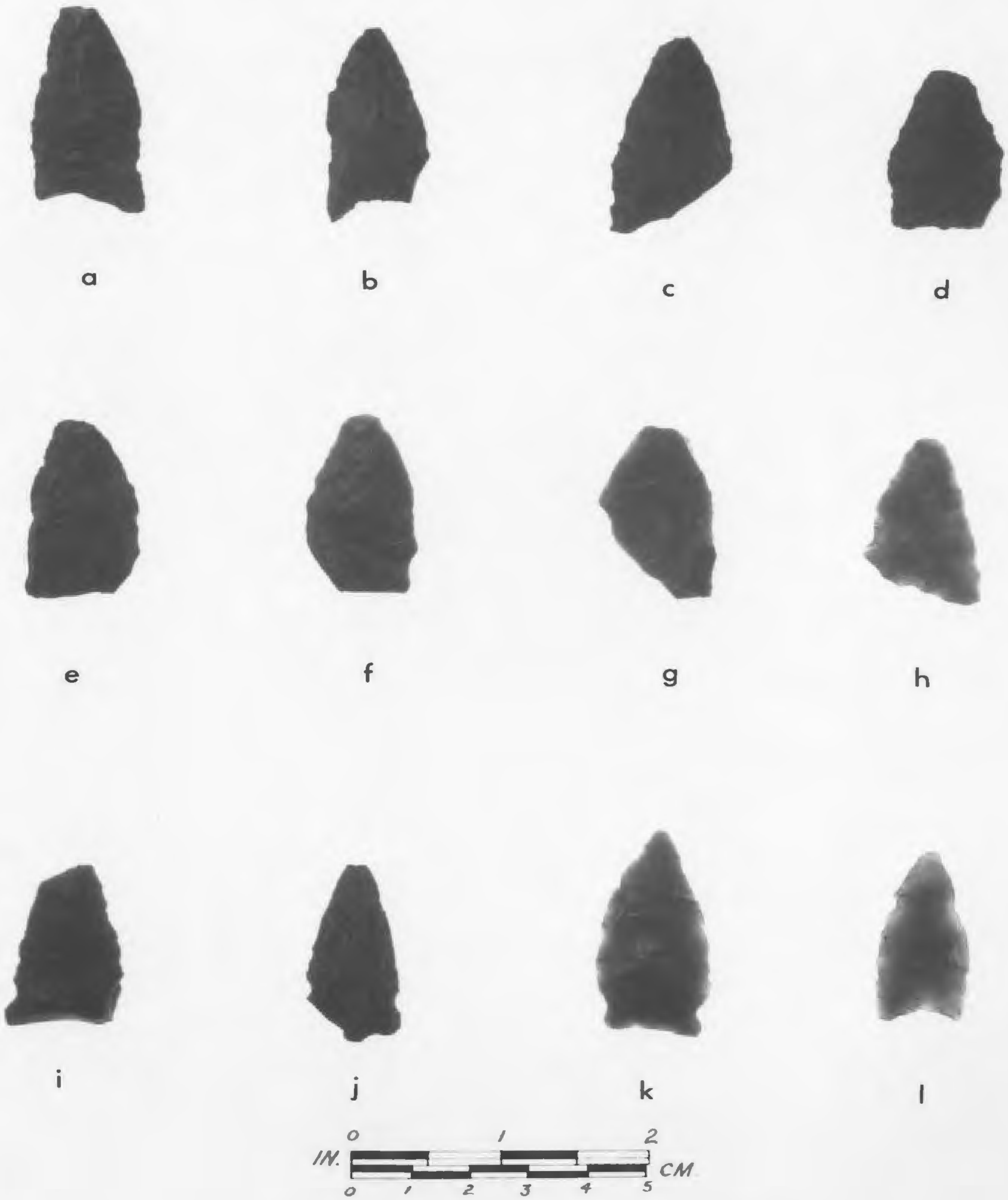


FIGURE 23

Figure 24

Bifaces and Biface Preforms

a-c asymmetrical notched bifaces

d-h biface preforms

i-k bifaces without hafting modifications

FIGURE 24

Figure 25

<u>Endscrapers</u>

a-m	dorsally modified endscrapers
n-r	marginally retouched endscrapers
s-u	blade endscraper fragments
v	quartz crystal endscraper

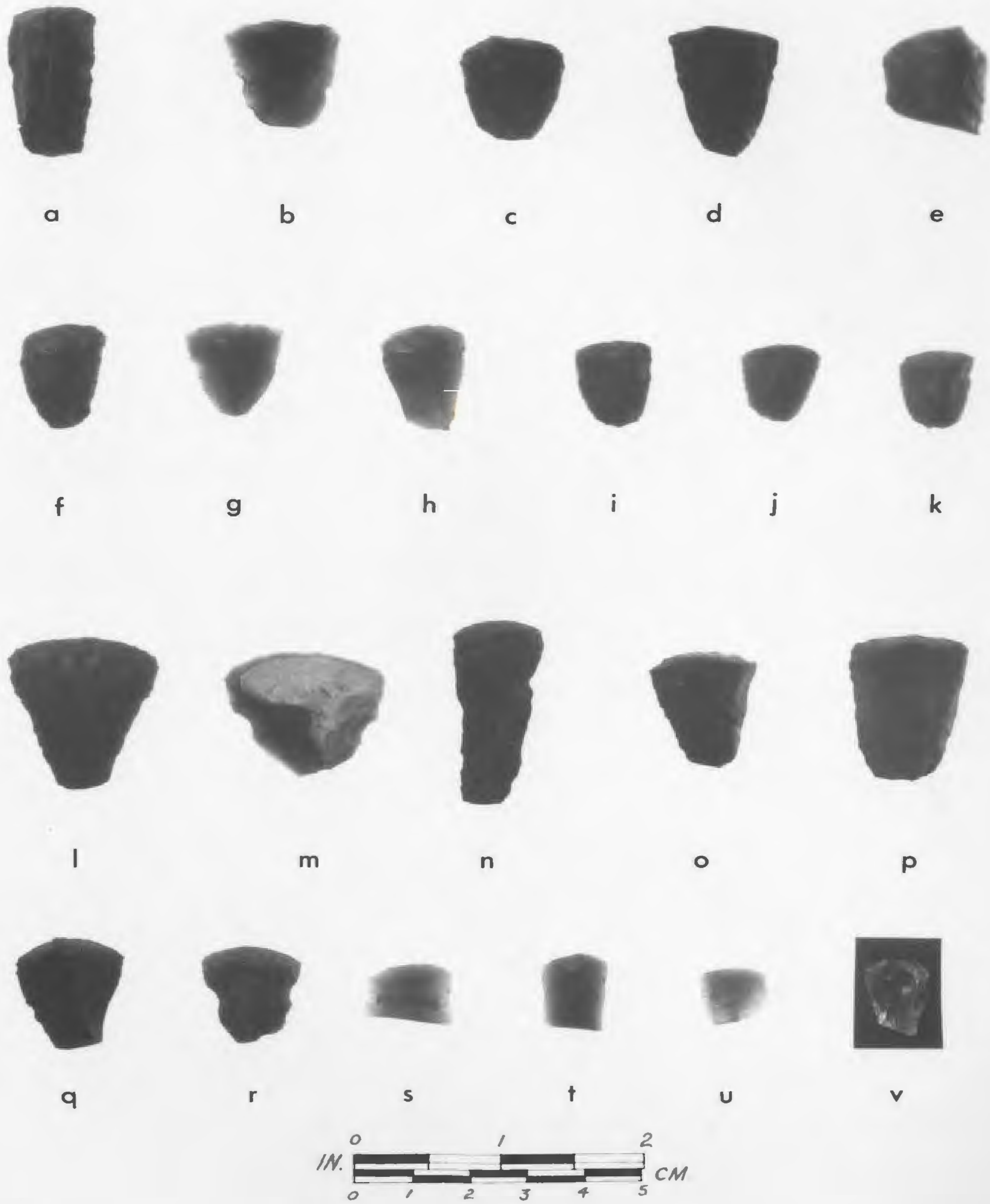


FIGURE 25

Figure 26

Sidescrapers and Burin-like-tools

a-d concave sidescrapers

e-g nephrite burin-like-tools

h ground chert burin-like-tool fragment

i-k nephrite burin-like-tool fragments

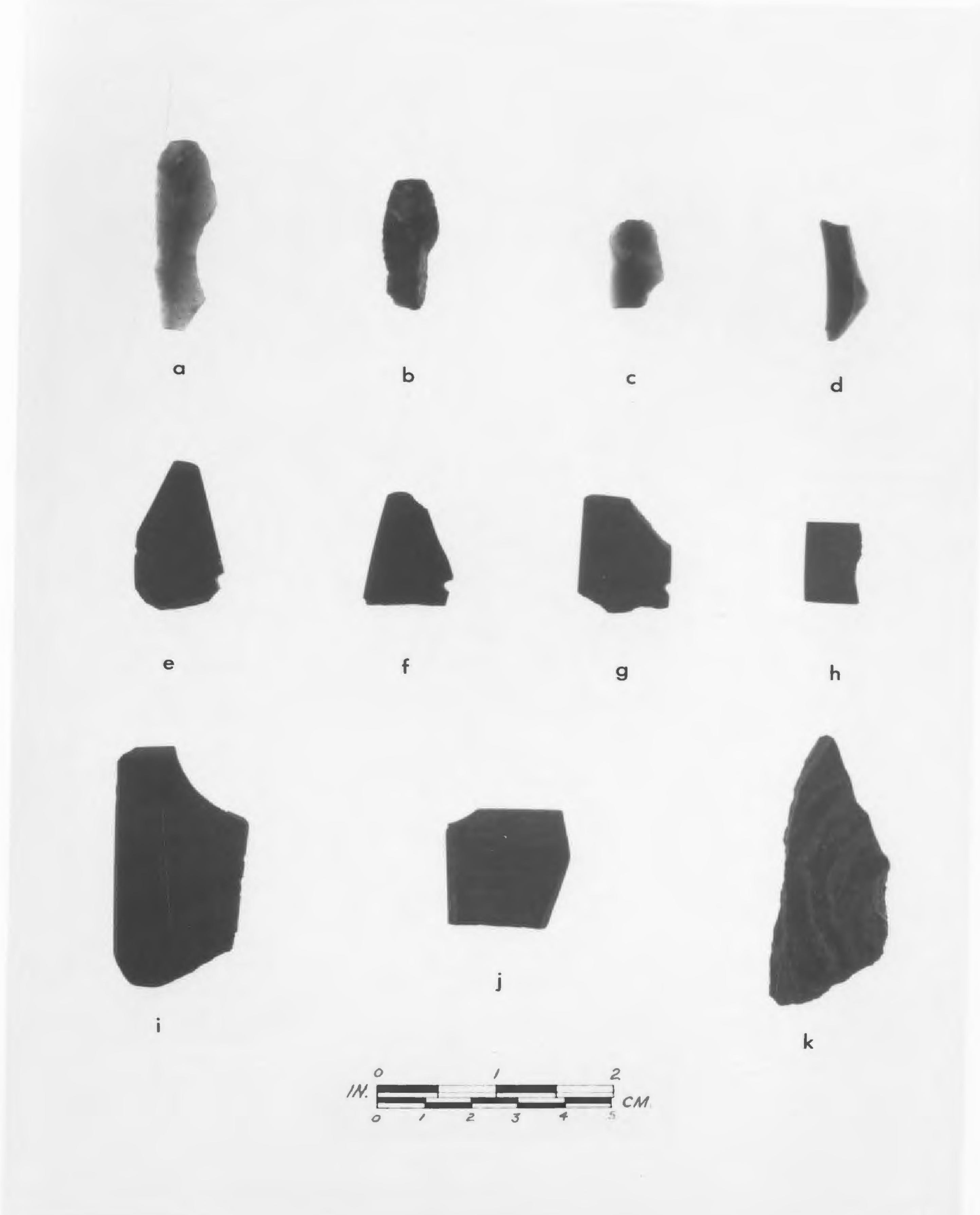


FIGURE 26

Figure 27

Microblades and Microblade Fragments

a-c	complete chert microblades
d-g	proximal-medial fragments
h-n	proximal fragments
o	distal fragment
p-r	retouched/utilized fragments
s-z	quartz crystal microblades

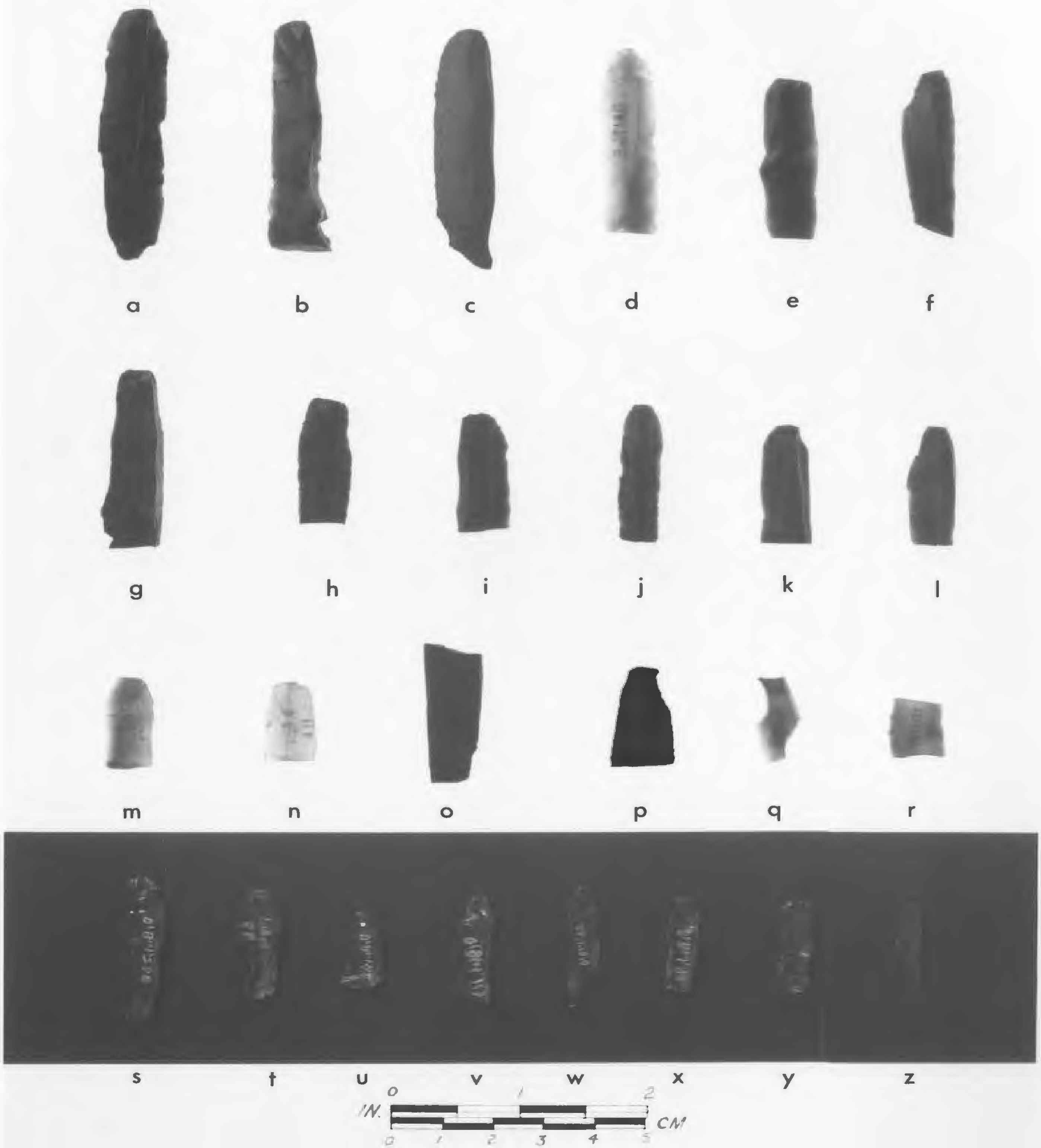


FIGURE 27

Figure 28

<u>Microblade Cores</u>

a-e chert microblade cores

f-j quartz crystal microblade cores

k unmodified quartz crystal

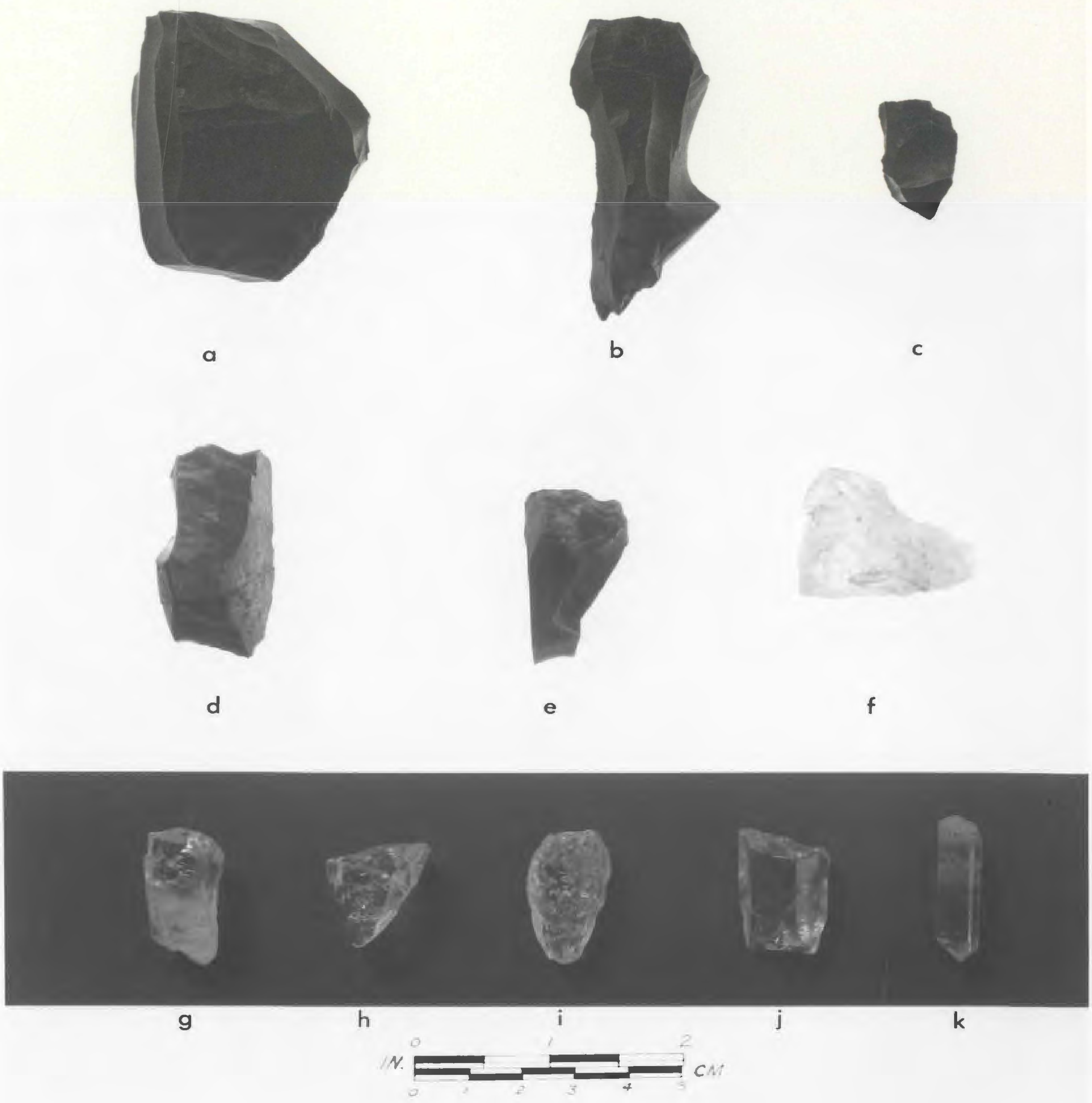


FIGURE 28

Figure 29

<u>Retouched/Utilized Flakes and Hammerstones</u>

a	retouched/utilized flake
b	multiple-notched flake
c	Ramah chert retouched/utilized flake
d-f	hammerstones

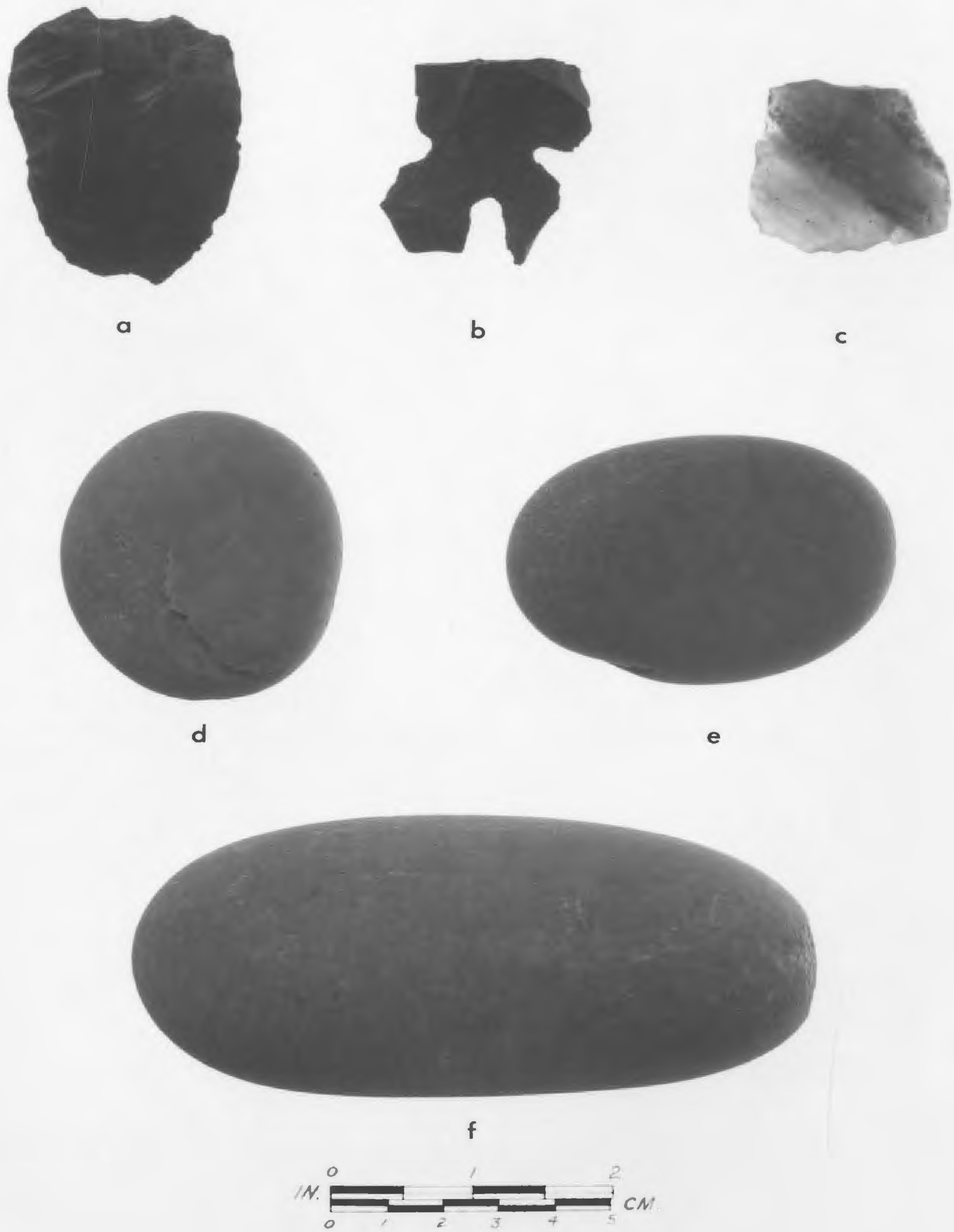


FIGURE 29

Figure 30

<u>Hammerstones</u>

a-c hammerstones

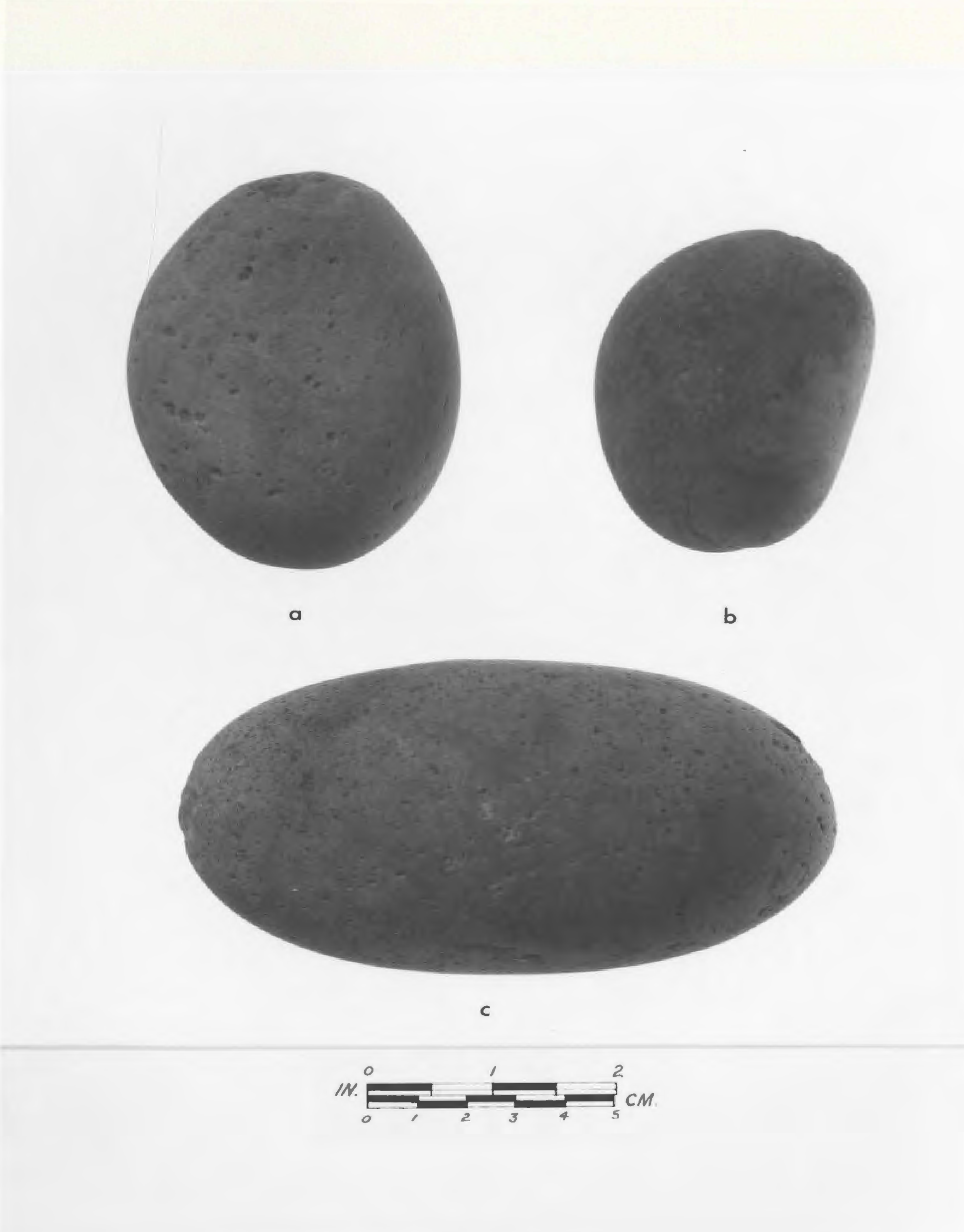


FIGURE 30

Figure 31

Early Palaeo-Eskimo Component

a-b	chipped and ground burin-like-tools
c	ovate sidenotched endblade
d-e	sideblades
f	rectanguloid endscraper
g-h, j	bipointed biface and fragments
i	lanceolate sidenotched biface
k	asymmetrical biface

FIGURE 31

178
1904