ST. JOHN'S HARBOUR 5 (HeCi-30) AND AN EXAMINATION OF GROSWATER AND EARLY DORSET RELATIONSHIPS IN LABRADOR

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by

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ABSTRACT

In 1981 archaeologist William Fitzhugh reported that excavations of St. John's Harbour 5 (HeCi-30), located in the islands east of Nain, Labrador, had recovered "important data from a house apparently occupied by a late Groswater Dorset group undergoing influence from Early Dorset culture" (Fitzhugh 1981:36). Fitzhugh based this interpretation on artifact style and raw material use he considered atypical for Groswater. In order to assess whether this site is indicative of influence from Early Dorset culture, Groswater and Labrador Early Dorest sites are reviewed to determine if interaction (resulting in influence) occurred between these groups in Labrador overall. To evaluate if interaction took place the site locations, dates, artifacts, raw material use, house styles and subsistence and settlement patterns for all Groswater and Labrador Early Dorset sites in Labrador are reviewed. From this analysis, it is concluded that Groswater and Labrador Early Dorset co-existed during overlapping time periods in the same geographic regions, but utilized unique tool kits and raw materials suggesting little direct interaction (including at the St. John's Harbour Site itself). At the same time, the pattern of site placement for these two groups indicates a partitioning of areas, evidenced especially in the Nain region, resulting in Groswater largely utilizing inner islands and Labrador Early Dorset utilizing the outer islands. This suggests passive interaction, that is, a decision to avoid each other through a division of land use and resources within geographic regions during the same time period.

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In the summer of 1998 I went to the Smithsonian Institution in Washington D.C. to access the collections and fieldnotes currently located there. Dr. Fitzhugh kindly allowed me full access to all of his notes, and spent time going over the various collections with me. Carla Lovett was also instrumental in assisting me in locating items, and in packing up collections to bring back with me to Newfoundland. Thanks are also extended to all for making my social time there memorable. Finally Dr. Stephen Loring and Dr. Joan Gero generously allowed me to stay at their home during my time in Washington.

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useful in understanding the site more fully.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION AND CULTURAL PREHISTORY BACKGROUND

1.1 Introduction

In 1981, archaeologist William Fitzhugh reported that excavations of St. John's Harbour 5 (HeCi-30), located in the islands east of Nain, Labrador, had recovered "important data from a house apparently occupied by a late Groswater Dorset group undergoing influence from Early Dorset culture" (Fitzhugh 1981:36). This thesis intends to determine whether a relationship between two Palaeoeskimo groups, Groswater and Labrador Early Dorset, can be recognized from archaeological sites in Labrador, and to examine the extent to which the St. John's Harbour 5 site provides such evidence.

Fitzhugh based his initial conclusions about the St. John's Harbour 5 site on his assessment that the collection contained artifacts that were atypical for Groswater. He also noted characteristics that he interpreted as being more reminiscent of Labrador Early Dorset, both in style and in raw material use (Fitzhugh 1977a, 1980a, 1981:42).

In order to test Fithzhugh's conclusions regarding St. John's Harbour 5, and determine if they apply to other Groswater and Labrador Early Dorset sites in Labrador, it is necessary to explore how cultural influence can be recognized in the archaeological record. As influence is one possible result of interaction, it is the presence or absence of interaction between these two groups that must actually be explored. To accomplish this, three possible scenarios are presented and tested: a) direct interaction occurred between Groswater and Labrador Early Dorset, b) indirect or passive interaction occurred, or c) no interaction occurred. In order to determine which scenario is most likely for Groswater

and Labrador Early Dorset in Labrador temporal, geographical, artifactual and architectural lines of evidence are combined to present a holistic picture. More specifically, these lines of evidence include:

1) Site Location

Interaction can occur when groups are in the same geographic region. In this thesis the locations of each cultural group are assessed to determine the extent of spatial overlap and therefore potential for interaction.

2) Dates

On the basis that there is a greater likelihood that the results of interaction are seen when face-to-face contact can take place, the dates for all Groswater and Labrador Early Dorset sites are reviewed to confirm the temporal position of each group to determine the likelihood of direct interaction occurring.

3) Artifacts

Artifacts can be used as cultural indicators to identify distinct cultural groupings. Artifact traits such as function, style, material and overall toolkit composition are used to identify differences between Groswater and Labrador Early Dorset and to determine if there is evidence of interaction between the groups.

4) House Styles and Site Features

Site features and house styles provide clues to how each group lived on the landscape. They can indicate the functions of sites, seasonality, and cultural characteristics of adaptation to the land. The comparison of the physical remains of the living areas will provide additional means to test for interaction.

5) Settlement and Subsistence patterns

Settlement and subsistence patterns will be explored for each group to see if there are elements that may produce evidence for interaction.

In chapter 2 more will be said about how these lines of evidence relate to interaction, but by combining these lines of evidence, it should be possible to assess the type of interaction occurring between Groswater and Labrador Early Dorset in general, and then determine whether influence as an outcome of interaction is evident at the St. John's Harbour 5 site.

The following section provides the cultural context for this thesis by outlining the Palaeoeskimo culture history in the Arctic in general, and within Labrador itself. Chapter 2 explores how interaction is recognized in the archaeological record and will expand the three scenarios to be tested to explore the relationship between Groswater and Labrador Early Dorset. Chapter 3 presents the evidence that will be used to test the scenarios from the Groswater and Labrador Early Dorset archaeological record in Labrador, including St. John's Harbour 5, and previously published and unpublished information. Chapter 4 provides a discussion of the findings in Chapter 3, makes conclusions regarding which interaction scenario best fits the available evidence, and provides comments on the St. John's Harbour 5 site. Appendix 1 includes a site report for St. John's Harbour 5, as one had not previously been completed for the site.

1.2 Arctic Palaeoeskimo Prehistory

Palaeoeskimo peoples are believed to have a common ancestry based in northeast Asia and Alaska beginning about 4500 B.P. These Arctic-adapted peoples spread

eastward throughout the Arctic, eventually reaching as far as Greenland, Labrador, Newfoundland and St. Pierre-Miquelon (Dumond 1987:86; LeBlanc 2000; Maxwell 1985:37; McGhee 1990:26, 1996:47; Schledermann 1996:40). Archaeologists have identified different Palaeoeskimo groups as emerging from this common ancestry over the 3000 to 4000 year occupation of the Arctic. Archaeologically, the Palaeoeskimo period includes:

> 1) Independence I, which is found in portions of Greenland and Labrador from 4000 to 3500 B.P.;
>
> 2) Sarqaq, which is found in southwestern Greenland from 3900 to 2700 B.P.;
>
> 3) Pre-Dorset, which is found in the Foxe Basin, Hudson Bay areas and Labrador, from 3500 to 3000 B.P.;
>
> 4) Independence II which is found in Greenland and the Central Arctic, from 3000 to 2500 B.P.;
>
> 5) Groswater, which is found in the Ungava Peninsula, Labrador, Newfoundland, the Quebec southern shore and St. Pierre-Miquelon from 3000 to 2100 B.P.; and
>
> 6) Dorset, which is further subdivided into Early, Middle and Late, and found primarily east of Victoria Island, into Greenland, Labrador, Newfoundland and St. Pierre-Miquelon from 2500 B.P. to 650 B.P.
>
> (Dumond 1987:86; Grønnow 1996; LeBlanc 2000; Maxwell 1985:37; McGhee 1990:26, 1996:47; Schledermann 1996:40; Tuck 1975). (See figure 1.1)

Relationships amongst the earliest Palaeoeskimo groups (that is, before Dorset) have been interpreted by archaeologists in different ways. For example, Independence I and Pre-Dorset have been presented by some as representing two separate migrations into the Arctic (McGhee 1976:37-38, 1979:8; Maxwell 1985:68). They cite evidence that suggests that Independece I appears slightly earlier than Pre-Dorset, and is generally found at higher latitudes (Schledermann 1996:42-43; McGhee 1990:32, 40). Others have

suggested that the archaeological differences between the two groups are so minimal that they should be collectively called Early Palaeoeskimo (see Maxwell 1985:68; Bielowski 1988:53-54; Wright 1995: 413-414; 422).

Independence II and Groswater are considered regional variants of so-called "Transitional" groups that temporally overlap with both earlier and later (Dorset) Palaeoeskimo groups; however it is not always clear what their relationship to preceeding and proceeding groups is or whether there is a demonstrable continuity between them.

The origins of the later Dorset groups is also a matter of some debate. At least two models can be used to explain this problem. One model suggests that there are several geographic regions in which Dorset developed *insitu* from existing Pre-Dorset populations. The second model favours a centralized location or "core area" from which Dorset developed from Pre-Dorset and subsequently spread through diffusion and migration (Cox 1978:114; Fitzhugh 1997).

The core area is a geographic area located around the northern Foxe Basin in the Hudson Strait, northern Hudson Bay, and the Hecla and Fury Straits (see Figure 1.1). Taylor (1968) concluded that the Pre-Dorset site at Arnapik in northeastern Hudson Bay and the Early Dorset site at Tyara, located on Sugluk Island just off the Ungava Peninsula, along with other sites in the Eastern Arctic, demonstrated cultural continuity between the two groups (Taylor 1968:83). It has been suggested that the Dorset then expanded from the core area to other areas throughout the Eastern Arctic, including Labrador and Newfoundland (Maxwell 1985; Dumond 1987; Fitzhugh 1997).

Figure 1.1
Canadian Arctic and Subarctic Map
Map adapted from McGhee (1990:6)

Ramsden and Tuck (2001) recently argued that while it is clear that there is a continuum in the early Palaeoeskimo sites Taylor described in the core area, it does not extend into the Dorset period. They maintain that what Taylor and others called Early Dorset, is actually related to the preceding Pre-Dorset, and is not really Dorset at all. They suggest that Middle Dorset in the high Arctic actually represents the true beginning of the Dorset culture. If we accept their argument, we are again faced with the problem of Middle Dorset origins, which they have not yet been able to explain (Ramsden and Tuck 2001).

Eventually the Dorset disappeared from the archaeological record at the same time the Thule populated the Arctic at about 1000 B.P. (although in Labrador and Ungava this occurs later, at c. 600 B.P.). The tools and technology of the Thule focused largely on whale hunting and were vastly different from the preceding Palaeoeskimo groups. The Thule are not believed to be the descendants of the Dorset; however they are the ancestors of today's Inuit (Maxwell 1985).

1.3 Newfoundland and Labrador Palaeoeskimo Prehistory

The Palaeoeskimo period in Newfoundland and Labrador largely mirrors that which is found in the Arctic and is divided into Early and Late Palaeoeskimo traditions. Early Palaeoeskimo sites date between 4000 and 2000 B.P. and include Independence I, Pre-Dorset, and Groswater (Tuck and Fitzhugh 1986:162-163; Tuck 1988:99-113). Late Palaeoeskimo sites date from 2500 to 650 B.P. and encompass Early, Middle and Late Dorset (Cox 1978; Tuck and Fitzhugh1986).

1.3.1 Independence I and Pre-Dorset in Labrador

While many place the first groups of Palaeoeskimo peoples in Labrador in the Pre-Dorset period (Cox 1978; Maxwell 1985), Tuck (1988:100-102) has argued that the tool assemblages of these Early Palaeoeskimo groups most closely resemble the Independence I groups found elsewhere in the Arctic. These first Palaeoeskimo groups enter northern Labrador around 4000 B.P. Whereas the term Pre-Dorset is more generally used to describe Palaeoeskimo groups at around 3500 B.P., Tuck maintains that the difference between Independence I and Pre-Dorset in Labrador is not as great as is seen elsewhere in the Arctic, and that a continuity exists between these two groups (Tuck 1988:105; also see Gendron and Pinard 2000:138).

Pre-Dorset are primarily found only as far south as Hopedale and Makkovik (Cox 1978:98; Tuck and Fitzhugh 1986:163) (Figure 1.2). However, Tuck (1978:139) has indicated a Pre-Dorset presence at Cow Head (DlBk-1) on the Northern Peninsula on the Island of Newfoundland. In Labrador as the Pre-Dorset expanded south there was an apparent decrease in population in the northern areas (Tuck 1988:104). Some of the defining traits of Pre-Dorset include: small triangular bi-pointed and stemmed points often with serrated edges; a variety of side and end scrapers; unifacially flaked burins; utilized burin spalls; some chipped and ground gravers; and microblades, but less numerous than among later Palaeoeskimo groups. Dwellings have been described as having axial features or mid-passage boulder pavements along with square hearths with upright slabs. As well, structures interpreted as summer dwellings are described as having one or two rows of boulders with a central hearth (Tuck 1988; Cox 1978).

Figure 1.2
Map of Labrador

Map adapted from Plate 2
McManus & Wood 1991

1.3.2 Groswater in Labrador and Newfoundland

Groswater Palaeoeskimos appear in Labrador c. 3000 B.P (Tuck and Fitzhugh 1986:163). Fitzhugh defined Groswater in the late 1960s through his work in Groswater Bay, Hamilton Inlet. He interpreted Groswater as a regional variant of Dorset, and thus named it "Groswater Dorset" (Fitzhugh 1972:148-151). At the same time that Fitzhugh was conducting fieldwork in Hamilton Inlet, Tuck was working in Saglek Bay in Northern Labrador and found artifacts that he interpreted as Early Dorset (Tuck 1975). A more recent evaluation confirmed that the majority of Tuck's Early Dorset sites were similar to Fitzhugh's Groswater Dorset sites, and it was concluded that the material found by both was from the same culture. With that, the term "Groswater" was adopted to describe both Fitzhugh's and Tuck's material (Tuck and Fitzhugh1986). Dropping the term "Dorset" from the original name followed the conclusion that the material attributed to Groswater did not show as strong a connection to Dorset as first suggested, and that the material more reasonably fit the Early Palaeoeskimo tradition rather than the Late Palaeoeskimo tradition (Tuck and Fitzhugh1986). Groswater is now interpreted as derived from the preceding Pre-Dorset group in Labrador representing a regional *insitu* development. This is evidenced in similarities in side-notched points, side-notched bifaces, ground burins with lateral notches and the presence of quartz crystal microblades in both groups. The use of mid-passage house structures and box-hearths in both Groswater and Pre-Dorset time periods is also considered as evidence for continuity (Cox 1978, 1988:3).

Groswater sites are located along the entire Labrador coast and into western, central and southern Newfoundland. Groswater sites disappear from northern Labrador after 2500 B.P. but continue in central Labrador until 2200 B.P. (Cox 1978). On the island of Newfoundland Groswater persist longer with dates now being reported to approximately 1900 B.P. at Port au Choix and in Bird Cove at 1900 B.P. and as late as 1750 B.P. (Renouf 1994:167; Hartery and Rast 2001, 2002). Groswater is recognized archaeologically by box-based and side-notched triangular endblades, many of which are plano-convex, and often show evidence of grinding; a large variety of knives and bifaces, many of which are corner-notched or stemmed; flared unifacial endscrapers; circular and ovate sideblades; chipped and ground burin-like tools; and a large proportion of microblades including stemmed and notched examples (Cox 1978; Fitzhugh 1978; Renouf 1994). Raw material use includes Ramah chert, quartz crystal and other materials in lesser proportions such as nephrite, soapstone and schist, but is dominated by fine-grained cherts. While only a few Groswater houses have been reported, the Postville (GfBw-4) site in Labrador and the Factory Cove (DlBk-3) site in Newfoundland show small, round structures with mid-passage or axial hearth features (Auger 1986; Loring and Cox 1986).

Fitzhugh has described the Groswater as living a modified maritime adaptation, with an exploitation of marine resources year-round supplemented regularly with interior resources such as caribou, fish and birds (Fitzhugh 1972:161). This conclusion was based on Fitzhugh's analysis that despite a lack of faunal remains on Groswater sites, the Groswater economy would have been similar, excluding whale hunting, to that known for

Inuit of the area. Within the Early Palaeoeskimo tradition of Labrador, Groswater can be described as one of a group of cultures that are "essentially sequential and are part of a single technological tradition, sharing, in addition, sequences of house forms, subsistence, and settlement patterns" (Fitzhugh 1980d:23).

Groswater has also been referred to as "Transitional" in the literature (Maxwell 1985:115; Renouf 1993, 1994; Nagy 1994). This is largely based on the temporal placement of Groswater in the period between Early Paleoeskimo and Late Palaeoeskimo and its contemporaneity with Early Dorset populations in the core area, where it is suggested that *insitu* continuity between Pre-Dorset and Dorset groups existed. The caution in using the term "Transitional" to describe Groswater, as Maxwell and Renouf have done, lies in the definition of the word which implies a continuity between groups, that to date, has not been fully demonstrated. This is supported by Cox who states:

> The drastic and sudden changes we see in virtually all material aspects of culture - tool types, house forms, raw material usage and settlement pattern - together with the persistence of Groswater Dorset in a virtually unchanged form farther south, indicate the entrance of a new population and population replacement in the north rather than rapid in-place cultural evolution (Cox 1978:106).

Ramsden and Tuck also support this by stating that:

> The Groswater culture represents the end of the Pre-Dorset period....It is analogous to Independence II and Tyara-type Early Dorset elsewhere in the Eastern Arctic and bears little or no resemblance to the Dorset culture that replaced it... (Ramsden and Tuck 2001:9).

1.3.3 Dorset in Labrador and Newfoundland

At the same time that Groswater continues on the island of Newfoundland, the Dorset appear in Northern Labrador around 2500 B.P. and persist until around 650 B.P..

While Early, Middle and Late Dorset are recognized in Labrador (Cox 1977, 1978; Tuck and Fitzhugh 1986), only Middle Dorset is recognized on the island of Newfoundland (Cox 1978; Tuck and Fitzhugh 1986).

The Dorset tool kit includes elements not found in the preceding Groswater, such as tip-fluted triangular end blades, and tabular burin-like tools. The raw materials utilized by Dorset show an increase in soapstone, Ramah chert and nephrite use. Settlements are generally larger and are often located at more outer coastal locations, indicating an increase in maritime specialization (Pastore 1996; Renouf 1993). Houses include semi-subterranean structures with features such as hearths, axial features, raised platforms, benches and pits (Harp 1976; Cox 1978:106-107; Maxwell 1985:196; Tuck and Fitzhugh 1986:164).

1.3.3.1 Early Dorset in Labrador

Early Dorset sites are restricted to northern Labrador, and there are no known Early Dorset sites south of the Nain region. Fitzhugh placed Labrador material into the Early Dorset category based in part on perceived similarities to Henry Collin's Early Dorset T1 site in the Central Arctic stating that "Early Dorset culture in Labrador is believed to have been inaugurated by the arrival of a new population with a culture similar to that known from northern Hudson Bay sites such as Southampton Island T1" (Fitzhugh 1980c:598).

Cox's description of Early Dorset includes:

> tip-fluted and a few bifacial triangular points with straight or slightly concave bases, notched and multiple notched symmetric bifaces, circular sideblades, triangular endscrapers with lateral bifacial flaking, large numbers of microblades, and stemmed or broadly notched burin-like tools (Cox 1978:107).

There are also possible whetstones, angular and rounded soapstone vessels and some ground slate endblades. Ramah chert is the primary lithic material, along with "smaller amounts of quartz crystal, nephrite, slate, schist and soapstone" (Cox 1978:107).

Structural information has been reported from Illuvektalik 1 (HhCk-1) in northern Labrador, where an apparent winter dwelling is located (Cox 1978:107), and from Komaktorvik 1 (IhCw-1), also in northern Labrador, where there are three houses (Cox 2002:4). Both sites suggest small dwellings with no mid-passages.

Analyzing Early, Middle and Late Dorset together, Cox suggested an inner island base camp occupation in winter, and a shift to outer islands in the spring for seals was the settlement pattern that could be used to described Dorset in general in northern Labrador (Cox 1978:111, 113).

Using the term "Early Dorset" does suggest, as Fitzhugh originally implied, that these Early Dorset groups in Labrador are the same as those found in the high Arctic. However, Ramsden and Tuck (2001:8) note that Early Dorset assemblages in the Arctic include "open socket and sliced harpoon heads, large numbers of microblades, few spalled burins which are eventually replaced by ground burin-like-tools, triangular and side-notched end blades, round or oval soapstone lamps, and ovate side blades".

In comparison they note that Middle Dorset in the Arctic shows that:

> ...double-line-hole, closed socket forms [of harpoon heads] entirely replace the sliced and open socket forms; in lithic items, spalled burins disappear entirely and are replaced by burin-like-tools; end blades are predominantly triangular or multiple side-notched and sharpened by the tip-fluting technique; rectangular soapstone vessels replace the small round or oval lamps; sled and probably breathing hole sealing gear appear; houses become well-defined rectangular semi-subterranean forms, often

> with paved floors or sleeping areas and side benches, and sometimes with tunnel entrances (Ramsden and Tuck 2001:8).

Comparing these trait lists to Cox's (1978) description of Labrador Early Dorset leads to the conclusion that despite Fitzhugh's initial assertion of similarities with the Central Arctic's Early Dorset sites, the traits presented for Early Dorset in Labrador fit more with the description of Middle Dorset in the Central Arctic. For example Early Dorset in Labrador also have triangular endblades with multiple side-notching and tip-fluted tips, a lack of burins and the presence of burin-like-tools. As such, Early Dorset in Labrador is interpreted in this thesis as the beginning of Middle or "Classic" Dorset and does not comprise part of the Early Paleoeskimo period, as it does elsewhere. This is confirmed in a recent paper where Cox (2002:4) states:

> Labrador Early Dorset is classic Dorset, with virtually all of the defining early Dorset characteristics including triangular tip-fluted harpoon endblades, multiple notched lance endblades, also tip-fluted, extensively polished burin-like tools made of chert and nephrite, soapstone lamps and cooking pots, and semi-subterranean houses.

In view of this distinction, the term "Labrador Early Dorset" will be employed throughout this thesis to distinguish it clearly from the Early Dorset of the Central Arctic.

1.3.3.2 Middle Dorset in Labrador and Newfoundland

Around 2000 B.P. the Dorset expanded beyond the geographical limits of Labrador Early Dorset; at this point they are referred to as Middle Dorset. The Middle Dorset inhabited the entire coast of Labrador and much of the Newfoundland coastline, except the Avalon Peninsula. Cox suggests that there is a continuum between Labrador Early Dorset and Middle Dorset, since there is little difference in their technologies (Cox

1977:87-88). Some of the differences that are apparent include the presence in the Middle Dorset toolkits of unifacial triangular points, a wider variety of notched and unnotched bifaces which are either symmetric or asymmetric, and a decline in the number microblades, with an increase in their width (Cox 1977:88, 1978:107). Endblade bases are also more concave for the Middle Dorset (Cox 1978:107) and tip-fluting on endblades is reported to occur on the ventral surface for Middle Dorset, as opposed to the dorsal surface for Labrador Early Dorset (Fitzhugh personal communication 1998). Stemmed chipped and ground burin-like tools are replaced by notched and unnotched forms, both chipped and ground and fully ground. Houses are generally larger, are often semi-subterreanean and can contain well defined axial features (Cox 1977:88; 1978:107).

1.3.3.3 Late Dorset in Labrador

Late Dorset is dated between 1000 to 650 B.P. and is confined to northern Labrador. It is defined by bifacially flaked, unfluted triangular points with concave bases; a variety of bifaces including notched and stemmed specimens; diagonal knives and scrapers; notched and stemmed flake knives; triangular or parallel-sided endscrapers; microblades increase in the range of size and their frequency declines; variously shaped burin-like tools that are tabular and ground; ground schist continues to occur and soapstone vessels are usually round or oval. Ramah chert continues to be the predominant lithic material used for the production of stone tools. Structural information for Late Dorset has been reported from northern Labrador at Okak 3 (HbCl-3) where a roughly rectangular structure with a mid-passage feature and flat paving slabs was found (Cox 1978:111).

Table 1.1 summarizes the characteristics of the Groswater, and the Early, Middle and Late Dorset in Labrador.

1.4 Groswater and Labrador Early Dorset relationship

The relationship between Early and Late Palaeoeskimo groups is an important research question in Arctic archaeology (see Murray 1996; Ramsden and Tuck 2001). In Newfoundland and Labrador this centers specifically on the relationship of Groswater and Labrador Early Dorset. While this has not been discussed in great detail in the literature, there are some statements to indicate the thinking to date. For example Tuck states that:

> Although these two traditions [Early Palaeoeskimo and Late Palaeoeskimo] clearly share a Palaeo-Eskimo or Arctic Small Tool tradition heritage no direct relationship between the two, nor, in fact, even any substantial evidence of contact between them can be inferred from the archaeological record in Newfoundland and Labrador (Tuck 1988:99).

Fitzhugh suggested the pattern was that of the Labrador Early Dorset moving into areas already abandoned by Groswater when he states:

> Radiocarbon dates from Early Dorset sites between Seven Islands Bay and Nain indicate a period of southward expansion into areas formerly held by Groswater Dorset groups. Some sites suggest a limited amount of mixing between these cultures, but generally the picture of replacement seems upheld (Fitzhugh 1980c:598).

As suggested in this quote, Fitzhugh did entertain the idea that there may be some "mixing" between the cultures. The most specific example is found in his descripton of St. John's Harbour 5, HeCi-30, which he describes as a Groswater site undergoing influence from Labrador Early Dorset based on an assemblage that appeared atypical for Groswater, but was reminiscent of Early Dorset (Fitzhugh 1981:36). Fitzhugh also suggests that, while not the case in Labrador, in Newfoundland there may be room to

Table 1.1: Comparison of Groswater, Early, Middle and Late Dorset Traits in Labrador

	Groswater **3000-2100 B.P.**	**Early Dorset** **2500-2400 B.P.**	**Middle Dorset** **2000-1400 B.P.**	**Late Dorset** **1000-650 B.P.**
Location	North, central and southern Labrador coast	Northern Labrador	North, central and southern Labrador coast	Northern Labrador
Endblades	plano-convex, box-based, side-notched end blades	tip-fluted and a few bifacial triangular points with straight or slightly concave bases some ground slate endblades tip-fluting on dorsal side	tip-fluted and a few bifacial triangular points with straight or slightly concave bases the inclusion of unifacial triangular points tip-fluting on ventral side bases are more concave	bifacially flaked, unfluted triangular points with concave bases generally larger in size
Bifaces	large variety of bifaces corner-notched or stemmed asymmetrical bifacial knives	notched and multiple notched symmetric bifaces,	notched and unnotched bifaces are either symmetric or asymmetric increased variety	a variety of bifaces including notched and stemmed and notched ones; diagonal knives
Scrapers	flared-end rectangular and triangular unifacial	triangular with lateral bifacial flaking,	triangular and unifacially flaked	diagonal scrapers triangular or parallel-sided
Microblades	large number of microblades, including notched and stemmed	large number of microblades	there is a decline in the number microblades, with an increase in their width	microblades increase in the range of size and frequency declines
Tip-fluted spalls	none	tip-fluted spalls	tip-fluted spalls	none
Burins	few true burins	none	none	none
Burin spalls	few burin spalls	none	none	none
Burin-like tools	chipped and ground burin-like tools	stemmed or broadly notched burin-like tools which are partially or fully ground	increased variety most common is fully ground with one or two notches	burin-like tools that are tabular and fully ground with a variety of shapes
Sideblades	circular and ovate sideblades	circular sideblades,	none	none
Vessels	some oval or sub-rectangular lamps	angular and rounded soapstone vessels	predominantly rectangular vessels with some oval lamps	soapstone vessels are usually round or oval

	Groswater **3000-2100 B.P.**	**Early Dorset** **2500-2400 B.P.**	**Middle Dorset** **2000-1400 B.P.**	**Late Dorset** **1000-650 B.P.**
Materials	high proportion of fine-grained cherts followed in proportion by the use of Ramah smaller quantities of quartz crystal, nephrite, slate, schist and soapstone	Ramah chert is the primary lithic material some fine-grained cherts, quartz crystal, nephrite, slate, schist and soapstone	Ramah chert is the primary lithic material some fine-grained cherts, quartz crystal, nephrite, slate, schist and soapstone	Ramah chert continues to be the predominate material used some fine-grained cherts, quartz crystal, nephrite, slate, schist and soapstone
Structures	small dwellings with central paving and mid-passage hearth of stone slabs	small subrectangular houses with no evidence of mid-passages	more defined, with semi-subterranean houses with well defined mid-passages	roughly rectangular with mid-passage feature and flat paving slabs

(Cox 1977, 1978, 2002; Tuck and Fitzhugh 1996; Fitzhugh personal communication)

of *insitu* transition from Groswater to Dorset (Fitzhugh 1980:598).

Likewise, Hood suggested the need to further consider the relationships between Groswater and Labrador Early Dorset stating that:

> ...continuities in house form indicated at Nukasusutok-12, transitional evidence from recently excavated Groswater Dorset/Early Dorset sites like St. John's Harbour in the Nain region (Fitzhugh 1981:36), and Fitzhugh's hypothesis that Newfoundland Dorset developed from a Groswater Dorset base suggest that alternatives to a discontinuity model should be considered: either rapid in situ development or a more complex interaction scenario (Hood 1986:54).

Beyond these statements however, a systematic review of the Groswater and Labrador Early Dorset sites and collections has not been done to further examine the evidence of a relationship between these two groups.

By examining the evidence for and against interaction between Groswater and Labrador Early Dorset, this thesis will provide further insight on this issue from a Labrador perspective.

1.5 Summary of Arctic Paleoeskimo Prehistory

The primary points of this chapter can be summarized in the following statements:

1) As with most of the Arctic, the general Paleoeskimo cultural history of Labrador is well understood and there is generally enough clear evidence to be able to place sites within a cultural group based on the artifacts, dates, site locations and house structures.

2) Within Paleoeskimo research, the nature of relationships between groups has been acknowledged as an important research question in order for us to more fully understand the cultural groups.

3) Beyond general references, the nature of these relationships has not been well explored through a systematic review of the collections and evidence available for the Labrador Paleoeskimo period.

4) The St. John's Harbour 5 site, HeCi-30, located near Nain, may be a good site to begin exploring the potential relationship between two Palaeoeskimo groups in Labrador, namely Groswater and Labrador Early Dorset.

CHAPTER 2

CULTURAL INTERACTIONS AND THEIR ARCHAEOLOGICAL SIGNATURES

2.1 Introduction

As established in Chapter 1, the nature of the relationship between the Early Paleoeskimo and Late Palaeoeskimo traditions, and specifically between Groswater and Labrador Early Dorset in Labrador has not been fully explored. St. John's Harbour 5, HeCi-30 has been described as a Groswater site that appears to be undergoing influence from Labrador Early Dorset, thus implying a relationship of interaction between the groups. However, in order to determine whether this is the case at this one site it is necessary to examine the relationship between Groswater and Labrador Early Dorset throughout Labrador. Is a relationship demonstrable and what is the nature of that relationship? Is the relationship one of direct interaction, indirect interaction, or did interaction occur at all? Is St. John's Harbour 5 truly reflective of an overall Labrador pattern of interaction between these groups, or is it an anomaly, or does it actually demonstrate interaction at all?

To answer these questions it is necessary to look at how interaction occurs between groups and what the results of interaction are and how they can be recognized archaeologically. This chapter reviews these points, along with presenting three possible interaction scenarios that could exist between Groswater and Labrador Early Dorset that will be tested in the following chapter.

2.2 How Interaction Occurs

Interaction among human groups can occur in various situations, and has often been linked to ecological or resource needs and the resulting strategies used to cope with these needs (Halstead and O'Shea 1989; Kelly 1992:46; Spielmann 1991:4).

Spielmann (1991) describes interaction as the result of economics and environment. The responses to changing variables in each include buffering exchange and mutualistic exchange. Buffering exchange sees an increase in the exchange of items between groups during times of resource scarcity. Mutualistic exchange, on the other hand, sees groups producing food and other resources specifically for trade. As a result specialization can occur within groups and a relationship of interdependence develops because "each group becomes dependent, to a greater or lesser degree, on the materials or services the other group provides" (Spielmann 1991:5). Different groups in different regions or ecological zones can then trade items unique to each area. This occurs during periods where there is high resource abundance, and the cost of production of the exchanged item is low. "Thus mutualism essentially takes advantage of, and perhaps emphasizes, niche separation between populations" (Spielmann 1991:5).

In order for this interaction to occur, however, a level of mobility is required for both groups to be within geographic proximity for trade to occur. Mobility overall is an important concept in understanding interaction "because the ways people move exert strong influences on their culture and society" (Kelly 1992:43). Further, as Renouf states: "Mobility is important because it underpins how a group manages resource unpredictability. This in turn affects how a group interacts with others" (Renouf *et al.* 2000:108).

Although the mobility patterns of hunters and gathers are often linked specifically to the need to gather food resources, there are many other elements that are required by a society that may result in the need to move to obtain them (Anthony 1990; Binford 1983; Kelly 1983, 1992; Lee 1966; Minc and Smith 1989; Nagy 2000:143; Rankin 1998; Rouse 1986). As Kelly (1992) states:

> Foraging is an important variable, but by no means does it alone determine mobility. People also respond to religious, kinship, trade, artistic and personal obligations...not all residential movements are directly controlled by subsistence. People move to gain access to firewood or raw materials for tools, or because insects have become intolerable. Movements can be socially or politically motivated, as people seek spouses, allies, or shamans, or move in response to sorcery, death, and political forces...Finally, residential mobility itself may be culturally valued. Formerly mobile hunter-gatherers often express a desire to move around in order to visit friends, see what is happening elsewhere, or to relieve boredom (Kelly 1992:48).

While all of these situations may not result in direct interaction with other groups, many, such as the need for marriage partners and allies, can result in relationships being forged outside the original social group.

Social characteristics of a group may also affect the likelihood of interaction occurring (Binford 1980; Broom *et al.* 1954; Schrotman and Urban 1987; Spielmann 1991). Binford (1980) explains residential mobility versus logistical mobility, which results in patterns identified as collectors and foragers (Kelly 1992:44). Foragers use residential bases from which they leave to gather food daily. They do not store foods but rather gather it as it is encountered. The size of the group and how often the bases are moved will depend on availability and sustainability of the resources (Binford 1980:5-7).

Collectors, on the other hand work to supply themselves with resources through organized task groups (Binford 1980:10). As a result, collectors store food. The different strategies employed by collectors result in different types of sites compared with foragers. There is a residential base and a location, along with field camp, station and cache sites (Binford 1980:10-12). In sum, "foragers move consumers to goods with frequent residential moves, while collectors move goods to consumers with generally fewer residential moves" (Binford 1980:15).

Binford ties the mobility strategies employed by groups strongly to environmental factors. The more unstable an environment or scattered the resources, the more frequent the move (Binford 1980:14-15). Thus, the type of hunter-gather group a culture is in Binford's continuum can indicate the likely mobility patterns used and can predict the likelihood of interactive scenarios occurring during higher periods of mobility.

Broom *et al.* (1954:975) suggested that factors affecting cultural change include: "(a) boundary-maintaining mechanisms which are found in "closed" as opposed to "open" systems; (b) the relative "rigidity" or "flexibility" of the internal structure of a cultural system; and (c) the nature and functioning of self-correcting mechanisms in cultural systems."

For example, boundary-maintaining mechanisms can control how people are included in a group, what the social structure is, and how willingly outsiders are accepted. Whether the changes that can be brought on by an interactive situation are accepted or rejected by a group can depend on how rigid or flexible a group is (Broom *et al.* 1954:975-976). New tools, materials or ideas may be readily incorporated into a group's

system. On the other hand, these new items may be rejected and in order to assert a group's own uniqueness there may be an increase in the use of familiar tools and materials.

The increased mobility of an open system should result in more opportunities for interaction compared to fewer opportunities in a closed system with less mobility. Comparing closed and open systems, we see that closed systems have rigid boundaries or rules for living within the society, while open systems are more fluid. These systems can also be linked to the availability of resources. It is more likely that a system will be closed where there are abundant and reliable resources available in an area. The assumption is that if resources are abundant, there is no need to expand beyond the known area, nor is there a need to rely on others. Conversely, fewer resources in an immediate area means groups are more likely to move about in order to seek out information to obtain resources (Broom *et al.* 1954:975-976; Friesen 2000:210).

Other factors besides mobility and group characteristics also affect interaction. For example, interaction between North American Plains and Pueblo peoples has been described as the result of climate, commodities being desired by the different groups, differential power among the groups and population size and density (Spielmann 1991:15). The size of a group is a factor in levels of interaction since larger groups can use larger geographic areas in smaller periods of time which increases the opportunity for encounters with greater numbers of people.

Linton (1963a, 1963b) argues that the acceptance or rejection of new cultural elements is not only linked with technological efficiency, but factors such as prestige and

the compatibility with the existing culture are important in determining whether new traits are accepted. Tools that have no use in one's cultural setting may not be accepted at all. Agricultural tools, for example, are going to be of little use to hunters and gatherers in an arctic environment.

Finally, non face-to-face interaction scenarios need to be considered since they can also result in cultural change. This is particularly the case in geographic regions that are shared by groups of people, but not necessarily at the same time. Indirect contact can, for example, occur when one culture group learns of another by scavenging the previously inhabited sites of the former group (Loring and Cox 1986:68; Park 2000).

2.3 The Results of Interaction and Archaeological Indicators

Interaction can result in change in some or all of the social mechanisms operating in a society. The results of interaction can include trade or exchange of ideas and goods, hostilities or competition, assimilation or extinction and avoidance or coexistence to name a few. All of these should have some archaeological signatures (Broom *et al.* 1954; Bielawski 1979; Green 1991; Odess 1998; Rankin 1998; Shennan 1996).

Trade or exchange in tangible items such as tools or raw materials is arguably the most archaeologically recognizable outcome of interaction. Archaeologists use the presence or absence of foreign materials as indications that some form of trade is occurring. As Spielmann notes:

> Intersocietal activity can take a variety of forms, from peaceable trade to raiding and warfare. Societies may exchange marriage partners, share information, form alliances for joint ventures, and participate in rituals together. Thus, interaction is not limited to trade, let alone trade in durable objects. However, because archaeologists are usually left with only durable cultural and environmental remains for their analyses, trade has been the primary focus of archaeological research on interaction (Spielmann 1991:3).

Unfortunately, recognizing trade of ideas, beliefs and information or patterns of avoidance in the archaeological record is much harder to do, which limits the interpretation of relationships. As a result, we may be missing meaningful interactive relationships between groups that inhabited areas at the same time, but which did not exchange items left behind in the archaeological record. By analysing geographic placement as a whole, or noting overlapping site locations specifically, we may be able to infer a relationship even if it is not indicated in the material culture.

Conflicts between groups can lead to one or both groups leaving an area, avoiding each other, or one group being assimilated by the other (Bielawski 1979:104). Raiding of resources from other groups directly, or from the territories of other groups can also be considered hostile or parasitic (Spielmann 1991b). Archaeologically, hostilities and warfare can be seen in wounds on human remains and weaponry in the material record. In the case of assimilation the material culture of the assimilated group will likely disappear and be replaced by the dominant group's material culture. This can result in the former group's original material cultural no longer being archaeologically visible.

Avoidance may result in groups actively choosing to not interact with one another and not compete for resources. On forager and farmer interactions Green (1991) notes that differences in how groups use the land can result in changes in the rules for exploiting the landscape (Green 1991:223; Rankin 1998:21). Further, the result of interaction may be that groups move away from one another as "...mobility can be a strategy to maintain cultural autonomy" (Kelly 1992:48).

While trade and exchange is one form of coexistence that results in material culture changes in both groups, another scenario shows groups may coexist with one another in an area with little to no change in each others culture. For example, Rankin (1998:16) notes that "foragers and farmers can live in proximity for centuries without adopting one another's socio-economic systems". Archaeologically this should be seen with little or no adoption of material cultures of the other group, and distinctive site placement in relation to the other group.

Another form of coexistence is seen with sharing the landscape. Renouf (2003) comments on niche differentation, where there are distinct patterns of settlement, and niche overlap, where the same coastal resources are being used. In the case of Recent Indian and Dorset populations on the island of Newfoundland, Renouf notes:

> ...while populations of both cultures existed in the same regions, site distributions do not fully overlap. This suggests that both culture groups were situating their sites with respect to each other. This does not mean avoidance or hostility but an accommodation to the other culture's camps and settlements - passively sharing the landscape at the same time as actively sharing resources and information (Renouf 2003:10).

As Renouf suggests, this interaction scenario of avoidance or of sharing resource areas should be reflected archaeologically within the site location patterns, if not in the material culture itself.

Of course the outcome of interaction between groups does not have to result in only one type of relationship. As Spielmann (1991b:37-38) notes, ecologists have looked at mutualistic relations amongst species and the results of interaction "vary from competitive to parasitic to mutalistic" and that the results are "outcome - and situation -

specific rather than fixed". There is not necessarily one form of interaction between species, which of course, Spielmann argues, should also be reflected within human groups.

2.4 Challenges in Identifying Interaction Archaeologically

While discussions of interaction suggest that there should be certain outcomes visible in the archaeological record, the nature of the archaeological record and formation processes make such assessments difficult at best. Some of the limitations considered in the study of interaction include:

a) Limitations of Archaeological Methods and Techniques

Differences in surveying techniques, data collecting and analyses all contribute to the data available from an archaeological site. These differences directly affect the evidence available to researchers and can determine whether interaction can or cannot be recognized at in the archaeological record. For example, areas that have only been surface tested only show a minor part of the archaeological record. Without more in-depth excavations material clues that indicate interaction can be missed.

Since Arctic specialists have often studied the archaeological records of cultures in relative isolation of one another, patterns of intergroup interaction have often been overlooked. For example, in discussing possible contact between Recent Indian and Palaeo-Eskimos Renouf *et al.* state: "Archaeological research on these two cultural traditions continued but they were studied in isolation from each other, as if they had maintained in reality the separateness that archaeological research had imposed upon them heuristically" (Renouf *et al.* 2000:106).

Varying approaches to artifact identification can lead to differing conclusions. Perhaps the best known example was Jenness' identification of the Coat's Island and Cape Dorset collections that led him to define the Dorset culture, while Mathiassen maintained that the differences within "Thule" collections indicated internal variation and not a separate culture. Seventy-five years after Jenness, most archaeologists still rely largely on visual inspections for the identification of artifacts and material types. The misidentification of lithic materials that have very similar appearances remains a problem, thus limiting our ability to identify possible interaction (Odess 1998:422-424).

The identification and understanding of stylistic differences and the extent to which differences or similarities in an archaeological assemblage are significant also remains problematic. This is not trivial since "...to speak of artifacts from different contemporaneous sites as similar in this context is to imply that interaction between the makers or their ancestors took place, while to say that they are dissimilar suggests that they do not constitute such evidence" (Odess 1998:417).

Recognizing the type of interaction can lead to different interpretations. McGhee (1997), in responding to Park's discussion on Dorset and Thule contact says:

> Park assembles convincing arguments against a significant degree of acculturation having occurred between Dorset and Thule peoples. However, the absence of acculturation cannot stand as evidence against contact having taken place between the two groups. One would expect evidence of acculturation or the transfer of technology if close and long-lasting relationships were established, or if a significant proportion of one population had been incorporated into the other group. However, if contacts were sporadic, ephemeral, or hostile, we might not expect to find this sort of evidence. I would suggest that the nature of contact between Dorset Palaeoeskimo and Thule/Inuit was more likely to have been of the latter kind, and that we should perhaps consider the sort of evidence which we would expect to survive as witness to such encounters (McGhee 1997:210).

The reliance on only one or two lines of evidence as indicators of interaction has also been shown to be problematic. For example, Odess points out that a change in raw materials used may indicate interaction; however, interaction would be missed if only styles of the artifacts were anlayzed that did not show a change at the same time that the raw materials did (Odess 1998:429).

Using poorly determined cultural histories as analogies for other areas is another concern that needs to be considered (see Hood 1986:54). Odess suggests:

> ...that in regions such as the Arctic, where local culture histories of many areas are still poorly understood and many assemblages insufficiently dated, attempts to use style as an indicator of interaction run the risk of relying too heavily on typology-based chronologies derived from other areas to meet with success. Implicit in such chronologies is an assumption of homogeneity in the regional distribution of stylistic forms, which risks obscuring significant spatiotemporal variations in the emergence and spread of particular tool forms (Odess 1998:421).

Likewise in those situations where the poorly understood assemblage does not conform to other areas of the known archaeological record there can be a tendency to dismiss radiocarbon dates that do not match the typology-based chronologies (Odess 1998:421).

Archaeologists have also used historical comparison or ethnographic studies to interpret the archaeological record for evidence of interaction (Wobst 1978). It is suggested that by studying contemporary groups, archaeologists may be able to test for patterns in the prehistoric record. Observed patterns from the ethnographic record, however, do not necessarily make their way into or, are preserved in the archaeological record. Ethnological studies are also limited as they only provide a snapshot of

information in time and place (Wobst 1978) and contemporary situations are not necessarily accurate representations of the past (Guyer 1997). In studying Thule archaeology for example, the direct historical approach from today's Inuit has merit; however, its application to the Dorset is more speculative (Friesen 2000:209).

b) Incorrect Identification of Interaction

As tools and raw materials are the evidence most often looked at to identify interaction in the archaeological record, it is important to consider other reasons why foreign tools and materials may show up in the collection of a site. Archaeologically this may be caused by other cultural phenomenon such as the reuse of sites. Reuse of a site can lead to apparent mixing of artifacts that may suggest face-to-face interaction. Scavenging of sites may also lead to artifacts from one culture in another's material culture. Park (2000) argues that traits cited as proof of contact between Dorset and Thule may be the result of other processes, suggesting for example that Dorset materials on Thule sites could be explained as being salvaged from abandoned Dorset sites. It is known that older sites in the Arctic were often re-used or materials from them removed for the purpose of constructing new houses (Bielawski 1988:57).

Peterson (1997:244) also outlines a number of reasons for cultural change including changed environmental conditions, specialization, new material availability, contact and fashion that can produce archaeological signatures similar to interaction. While some of the changes seen in the archaeological record can be interpreted as a result of a change in one component of the system, such as interaction, it is difficult to know what other systems may have contributed to the change seen archaeologically. "Beyond

recognizing the systemic nature of culture there is no real consensus among archaeologists on how to define and measure the variables, components, and subsystems within a cultural system" (D. Kennett 1996:246).

c) Problems Specific to Identifying Interaction in the Arctic Record

A problem specific to identifying interaction in the Arctic is the general similarity of Palaeoeskimo cultures. While it has been shown in Chapter 2 that there are key differences between the Palaeoeskimo groups, and particularly between Groswater and Labrador Early Dorset, there are many similarities that they share by virtue of belonging to the broad Palaeoeskimo tradition. Examples of interaction research, such as Dorset and Thule interaction (Park 2000; McGhee 1997) or Dorset and Norse interaction (Sutherland 2000), focus on groups that have significant differences in their tools, materials and settlement and subsistence patterns. For these scenarios interaction can arguably be more easily recognized in the archaeological record. In the case of Groswater and Labrador Early Dorset however, it is not always possible to easily recognize the presence of one group at another's site based solely on tool types and raw material use. For example, while Groswater use colourful cherts they also utilize Ramah chert, a material used heavily by Labrador Early Dorset. As well, certain tool categories such as microblades are abundant with little differences between the groups. As such, the presence of these traits alone is not sufficient to indicate presence or absence of the other group. In addition, small findspots, without clearly diagnostic materials cannot be relied on as their cultural affiliations may not be clear.

Dating in the Arctic also brings specific problems as has been discussed by McGhee and Tuck (1976), including issues such as the reservoir effect, and dating old and reused wood. Further, the dates that are obtained from reliable samples on Palaeoeskimo sites are from a problematical period in palaeo-environmental history. Calibration curves for this period reflect variations in the natural rate of Carbon 14 production which in turn produce multiple calendrical dates (Bowman 1990:55). This is in addition to the fact that radio carbon dating does not represent an exact date, but rather is the statistical probability that the date of the sample falls within a specified date range, which could span generations.

The fact that the Arctic archaeological record can be ephemeral because of high mobility of people in small group sizes adds to methodological problems, including survey techniques, information recording and subsequent interpretations (Biewlawski 1988:71). Shallow stratigraphy, reuse of sites, and other post depositional disturbances, both natural and cultural, can lead to mixing of assemblages and interpretation difficulties.

Varying Arctic environments also provide differential preservation of sites. In some locations such as Newfoundland and Labrador there is a lack of faunal preservation because of acidic soil and warm summer conditions. Faunal remains are important in expanding our understanding of ecological conditions and can point to interactive scenarios of exchange between different ecological zones (Spielmann 1991:5). Cox and Spiess (1980) comment that without faunal preservation their reconstruction of Dorset subsistence-settlement systems "had to rely heavily on comparative information about site

placement and configuration from historically and archaeologically known Labrador Inuit sites and data on seasonal distribution of animal resources" (Cox and Speiss 1980:660). Conversely, LeBlanc (1994:91) at the Crane Site in the western Arctic commented that a rise in permafrost helped in preservation; however, the cultural layer was often disturbed and artifacts were found dispersed throughout the profile due to the effects of cryoturbation, desiccation cracking, rodent disturbance, and slumping, particularly near the terrace edge.

2.5 Archaeological Evidence of Interaction

Despite these kinds of problems it should still be possible to combine a number of lines of evidence to determine whether cultural interaction can be identified from the archaeological data. Guyer (1997) used a model that incorporates dates, seasonality and subsistence activities along with geographic proximity and the mobility patterns of each group to determine the plausibility of the hypothesis that Dorset and Thule competed for resources. Odess (1998) argued that the approach of using only an analysis of artifact style or an analysis of raw materials alone is inadequate, and that only by looking at both together could you have a more holistic picture for recognizing interaction.

While Gendron and Pinard (2000) discussed the determination of cultural affiliations, their statement is also applicable to determining the presence of interaction when they say:

> Reliance on simple similarities (or dissimilarities) of individual components to determine cultural affiliation appears to be insufficient if we desire improving our knowledge of eastern Arctic prehistory. An approach that takes into consideration multiple elements as part of a dynamic system will prove more robust results than the culture-history and

> typological approaches (still) favoured in eastern Arctic prehistory (Gendron and Pinard 2000:138).

Following the examples of Guyer, Odess, and Gendron and Pinard, a multivariate approach to identifying interaction is preferable for this study. Several lines of archaeological evidence can be expected to indicate interaction if it took place. While some of these lines of evidence will only contribute in minor ways, others are crucial in the assessment for interaction. As indicated in Chapter 1 there are several lines of evidence that will be examined. The following outlines more specifically how each could be used in this exercise.

a) Dates

Dates associated with the sites of two different groups can indicate a type of potential interaction. If there are overlapping date ranges then there is the possibility of face-to-face interaction occurring during that time period. If dates do not overlap, then there may have been no interaction, or in the case of scavenged sites, a form of indirect interaction. Archaeologically, dates are primarily supplied through radiocarbon analysis or through stratigraphic information.

b) Site Location

Site locations can also indicate the possible nature of interaction. Overlapping sites dated to the same time period may indicate direct interaction, while site locations clearly separated may be the result of no interaction or a form of avoidance or an understanding on how to share the resources of the region by maintaining separate locations.

c) Tools

The primary methods used to recognize interaction archaeologically are usually based on artifacts, and specifically their typologies or styles and their materials (Odess 1998:417; Park 2000:192). The tools used by each group need to be identified and quantified. What are the typical items that define each group archaeologically? How are they the same or different from the other group? Direct interaction may be recognized through indications that tools clearly associated with one contemporaneous group are being used to some extent by the other. For example, a typically Dorset endblade with tip-fluting showing up among a range of Groswater box-based endblades, or a Groswater box-based endblade that is tip-fluted could be interpreted to indicate interaction.

d) Raw Materials Used

Patterns of raw material use can be an important element in assessing potential relationships. Knowing what raw materials are used predominately by a group can indicate the geographic boundaries of the group. If materials generally associated with one group's geographic area are showing up in the assemblages of another group, and outside of the latter's geographic area, then it may also indicate possible relationships such as trade. Further, if access to material sources is limited to one of the groups, then control of that resource may be important in defining a relationship. If one group can be shown to change patterns of raw material use around the time that interaction is possible, then interaction may be given as a reason for the observed change.

e) House Styles and Site Features

Differences and similarities between house styles of two separate but chronologically overlapping cultures may suggest interaction, especially if a change in styles can be correlated to the period in time that the interaction is suggested to have occurred.

f) Settlement and Subsistence Patterns

Overlapping subsistence and settlement patterns of groups in adjacent geographic regions will increase the probability that the groups will meet and thus interact.

While any one of these lines of evidence alone may be explainable in other ways (such as different house styles actually being reflective of seasonality differences), combining all of them should provide a more complete picture on which to determine if the patterns observed are a result of interaction.

2.6 Identifying Interaction between Groswater and Labrador Early Dorset

Utilizing these lines of evidence three interaction scenarios and their expected results are considered for Groswater and Labrador Early Dorset:

Scenario 1: Direct Interaction Between Groswater and Labrador Early Dorset Interaction

Groswater and Labrador Early Dorset had face-to-face contact such as trade or exchange. If this is the case, then we might expect to the results outlined in Table 2.1.

Table 2.1: Expected archaeological results of Direct Interaction

Line of Evidence	Expectations
Dates	There is an overlap in the dates.
Site Locations	There are sites that have both Groswater and Labrador Early Dorset traits either at the exact same location or within a small geographic region.
Tools Made	There is a strong likelihood that tools will show clear evidence of mixing of stylistic and functional traits between the two groups.
Materials Used	There should be a change in traditional materials used with the inclusion of some foreign material generally associated with the other group.
House Styles	There is the possibility that there will be a change in traditional house styles with elements associated with the other group being adopted.
Settlement and Subsistence Patterns	There may be changes in patterns of land use as a response to the other group's presence.

Scenario 2: Indirect or Passive Interaction between Groswater and Labrador Early Dorset

While in the same place at the same time, Groswater and Labrador Early Dorset had limited contact with limited or ephemeral evidence of interaction available in the archaeological record. If this is the case, then we might expect to the results outlined in Table 2.2.

Table 2.2: Expected archaeological results of Indirect or Passive Interaction

Line of Evidence	Expectations
Dates	There should be an overlap in the dates.
Site Locations	While sites should be in the same geographic region, they may be at different locations within the region. There will be few sites that show both Groswater and Labrador Early Dorset present at the exact same location.
Tools Made	There may be some examples of tools that show evidence of a mixing of stylistic and functional traits between the two groups.
Materials Used	There may be some evidence of a change in traditional materials used with the inclusion of some foreign material generally associated with the other group, but this will not be a regular occurrence.
House Styles	There may be a change in traditional house styles with elements associated with the other groups being adopted.
Settlement and Subsistence Patterns	There may be changes in patterns of land use as a response to the other group's presence.

Scenario 3: No Interaction between Groswater and Labrador Early Dorset

> Groswater and Labrador Early Dorset had no face-to-face contact with no evidence of trade or exchange seen in the archaeological record. If this is the case, then we might expect to the results outlined in Table 2.3.

Table 2.3: Expected archaeological results of No Interaction

Line of Evidence	Expectations
Dates	Dates may or may not overlap.
Site Locations	There should be few sites if any that have both Groswater and Labrador Early Dorset traits either at the exact same location or within a small geographic region.
Tools Made	Tools will be unique to each group.
Materials Used	Materials used should be unique to each group.
House Styles	House styles should be unique to each group.
Settlement and Subsistence Patterns	There should be clear differences in patterns of land use for each group.

The following chapter will present the evidence from the Groswater and Labrador Early Dorset sites in Labrador. Using each of the lines of evidence suggested in these tables, it will be determined which of these three interaction scenarios the archaeological evidence supports for Groswater and Labrador Early Dorset.

2.7 Chapter Summary

The primary points of this chapter can be summarized in the following statements: 1) Before determining whether influence from Early Dorset is observable at one Groswater site (St. John's Harbour 5), it is necessary to look at the question of interaction first. Influence is a result of interaction, and it needs to be determined whether interaction

between Groswater and Labrador Early Dorset can be demonstrated from the Labrador evidence.

2) Interaction is the result of factors such as mobility, group characteristics and environment. It can result in various outcomes that have been described in the literature, including trade or exchange of ideas and goods, hostilities or competition, assimilation or extinction and avoidance or coexistence

3) The results of interaction can be challenging to see in the archaeological record, especially in an arctic/subarctic context.

4) However, the results of interaction should be measurable if you combine more than one line of archaeological evidence, specifically dates, site locations, tools made, materials used, house styles and settlement and subsistence patterns.

5) Using these lines of archaeological evidence, they should combine to show one of three possible scenarios that can be tested:

a) direct interaction

b) sporadic or passive interaction

c) no interaction

CHAPTER 3

DETERMINING THE GROSWATER AND LABRADOR EARLY DORSET RELATIONSHIP IN LABRADOR

This chapter provides the data and analysis for testing the three scenarios laid out at the end of Chapter 2. Determining whether interaction is evident between Groswater and Labrador Early Dorset in Labrador is achieved by reviewing the site locations, dates and house styles and settlement and subsistence patterns of all known Groswater and Labrador Early Dorset sites in Labrador and exploring the artifactual evidence in detail for ten of these sites.

3.1 The Sample

All Palaeoeskimo sites recorded in Labrador before 2001 were identified and reviewed using the Site Record Forms (SRF) submitted by archaeologists to the Provincial Archaeology Office (PAO) of Newfoundland and Labrador (PAO n.d.). In the majority of cases the archaeologist's original assessment of the site's cultural designation was used; however in a few cases where there has been more recent reevaluations of the sites and the collections, the new cultural designation was used (for example, Tuck's 1975 work listed Early Dorset for sites that were later recognized as Groswater (see Tuck and Fitzhugh 1986)). In addition, access to field notes at the Smithsonian Institution provided a way to verify cultural affiliations not clearly noted on the SRF at the PAO. This was the case particularly for Labrador Early Dorset where often the SRF had a site listed merely as Dorset, and where the notes from the Smithsonian identified the site as Labrador Early Dorset. In some cases where the initial placement was either questioned

or described as Early - Middle Dorset the site was placed in the Labrador Early Dorset category based on comments in the notes that indicated the site's similarity to other well-established Labrador Early Dorset sites.

At the time of this review there are 82 sites with a Groswater designation (see Appendix 3). Of these, 15 are listed as possibly Groswater, and a review of their collections where possible has not confirmed them as definitely Groswater. Consequently, these questionable sites are not included in this analysis. Of the 67 remaining sites, 22 are listed as only Groswater, while 45 sites are ascribed to Groswater and also have one or more other cultural designations. Included in these 67 sites is St. John's Harbour 5, HeCi-30. As this site has previously not been fully reported and since it may provide specific clues for Groswater and Labrador Early Dorset interaction, a full site report is included in Appendix 1.

At the time of this review there are also 49 sites with a Labrador Early Dorset designation (see Appendix 4). Of these, 17 are listed as being possibly Labrador Early Dorset and a review of these collections, where possible, failed to provide additional evidence to confirm the identification as definitively Labrador Early Dorset. These questionable sites are not included in the following analysis. Of the remaining 32 sites, 17 are only Labrador Early Dorset, while the other 15 are Labrador Early Dorset along with one or more other cultural designations.

3.2 Establishing Place and Time

Establishing place and time is essential to evaluating all three interaction scenarios. In Chapter 2 it was established that the current literature suggests that

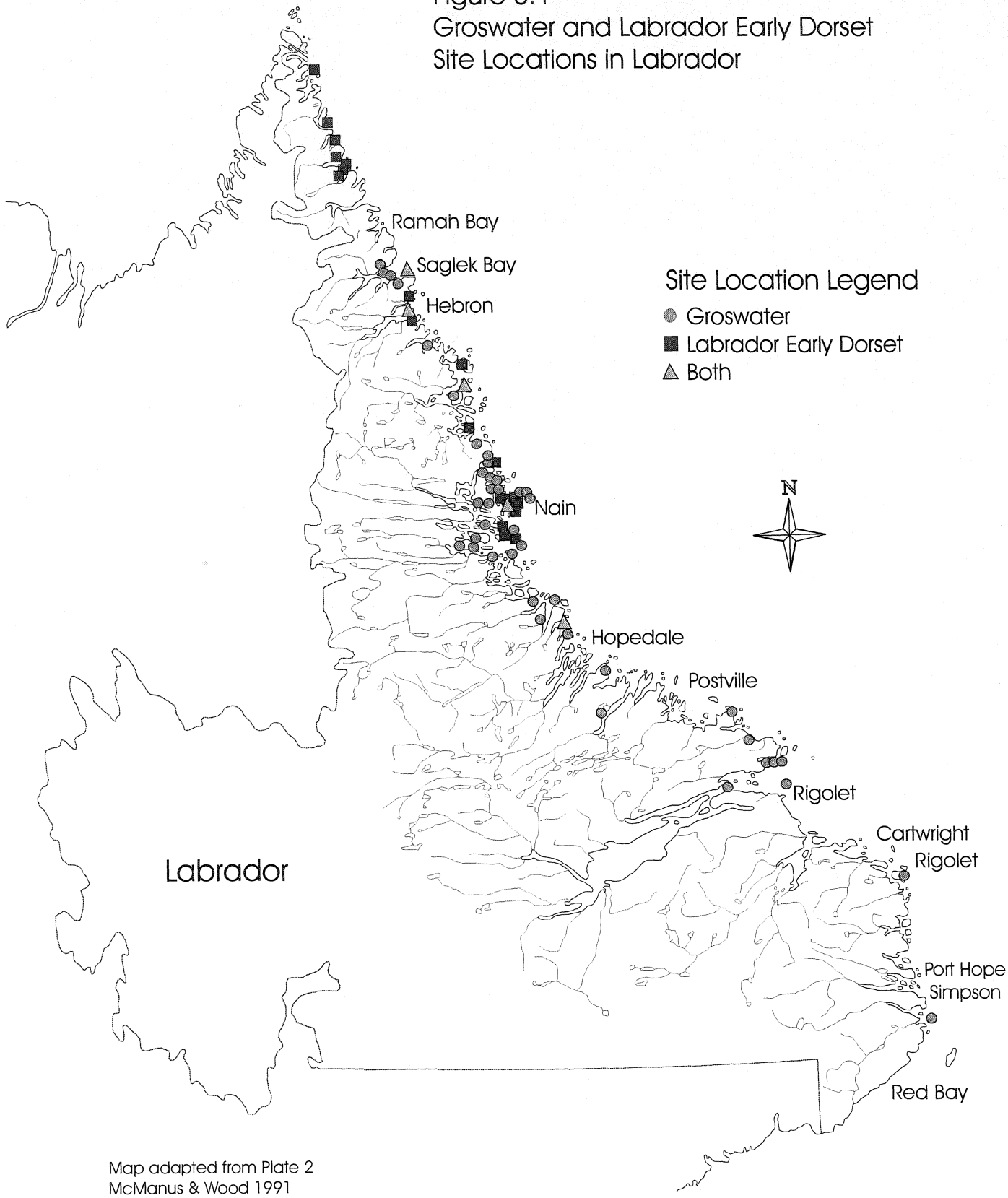
Groswater and Labrador Early Dorset were using roughly the same geographic areas from the northern tip of Labrador to the Nain region, and that on a broad level they have a temporal overlap around 2500 B.P. (Cox 1978; Tuck and Fitzhugh 1986). This at least suggests that the possibility of either direct or indirect contact could occur between these groups, although it does not undermine the possibility of no interaction. To confirm the site location and dates interpretations in the literature and determine what it might mean for interactive situations, all Groswater and Labrador Early Dorset site locations and available dates were reviewed.

3.2.1 Site Locations

Plotting the locations of each of the 67 Groswater sites and 32 Labrador Early Dorset sites (Figure 3.1) indicates that the locations are consistent with previously known information. Groswater sites are found throughout Labrador from the north in the Saglek Bay region to the Straits region in the south and Labrador Early Dorset sites are only located from northern Labrador as far south as the Nain region. Figure 3.1 also indicates that from the Saglek Bay region in the north to the Nain region both the Groswater and Labrador Early Dorset are present and there are no broad areas along this north-south stretch of shared coastline that indicate exclusive use by only one of the groups.

These site patterns are consistent with the descriptions of land use for both groups. Groswater have been described by Fitzhugh as living a modified maritime adaptation with an exploitation of marine resources year-round supplemented regularly with interior resources such as caribou, fish and birds (Fitzhugh 1972:161). This results in settlement patterns "with winter settlements deep in the bays and fall and spring camps

Figure 3.1
Groswater and Labrador Early Dorset
Site Locations in Labrador



Map adapted from Plate 2
McManus & Wood 1991

on the inner islands" (Cox 1978:104).

Labrador Early Dorset are described as having the same pattern as Middle and Late Dorset. This pattern indicates that in the fall and winter settlement was on the inner islands with "open water sealing from boats and a heavy reliance on the harp seal migration in the fall, and sealing at breathing holes and at the *sina* during the winter" (Cox 1978:112). In the spring Dorset were on the outer islands to hunt seal and may have been back on the inner islands for the summer (Cox 1978:112-113).

Examining the site locations for evidence of interaction indicates a few observed patterns. Firstly, there are three sites, (IaCr-1, IbCp-1 and IdCr-9 in Appendices 3 and 4) that include both Groswater and Labrador Early Dorset in their site designations. Further, in areas such as the Dog Bight region near Nain or the Saglek Bay region in northern Labrador there are Groswater and Labrador Early Dorset sites are recorded separately, but which are only metres apart. At this point, however, these overlapping site locations do not provide enough evidence to indicate interaction, and an examination of their collections and context is required to provide further comment.

A more interesting pattern worth noting emerges in the Nain region where there is a higher concentration of islands off the mainland allowing for more site location choices between outer and inner zones than is seen along the rest of the coastline north of Nain. Looking more closely at the distribution of Groswater and Labrador Early Dorset sites in the Nain region (Figure 3.2) indicates that a clear majority of Groswater sites are only on the inner islands, while all of the Labrador Early Dorset sites in this area are on the outer regions with very little overlap between the two groups.

This pattern seems to indicate that there is a clear preference by each group as to their site locations on the inner islands versus the outer islands. While it might be argued that what we are seeing are seasonal rounds of people that should essentially be considered the same, this may also indicate a choice being made by each group to consciously avoid the other. Once again though, date and artifact evidence is necessary to fully evaluate these options.

3.2.2 Dates

There are 18 radiocarbon results for 14 of the Groswater sites and seven radiocarbon results from four Labrador Early Dorset used from the sites examined in this study (see Appendices 3 and 4). All dates were calibrated using Intercepts Method A (Stuiver et al. 1998). Plotting these calibrated results at one sigma (Figure 3.3) indicates that there are potentially overlapping dates between 2400-2600 B.P. for sites from northern Labrador to the Nain region. In total there are eight dates that fit this range, three Groswater dates from three different sites and five Early Dorset dates from three different sites. The likelihood that these results may date contemporaneous occupations can be assessed through Pairwise testing using a student's t-test.

The comparison of radiocarbon results using a student's t-test is summarized in Table 3.1. The resulting calculations for every pair of dates tested returned values less than 1.96, which indicates that the difference between each of the radiocarbon results could be accounted for by statistical error (see Appendix 5). As such, it can be concluded that the difference between each of the radiocarbon results is not significant, and that these results could represent contemporaneous events.

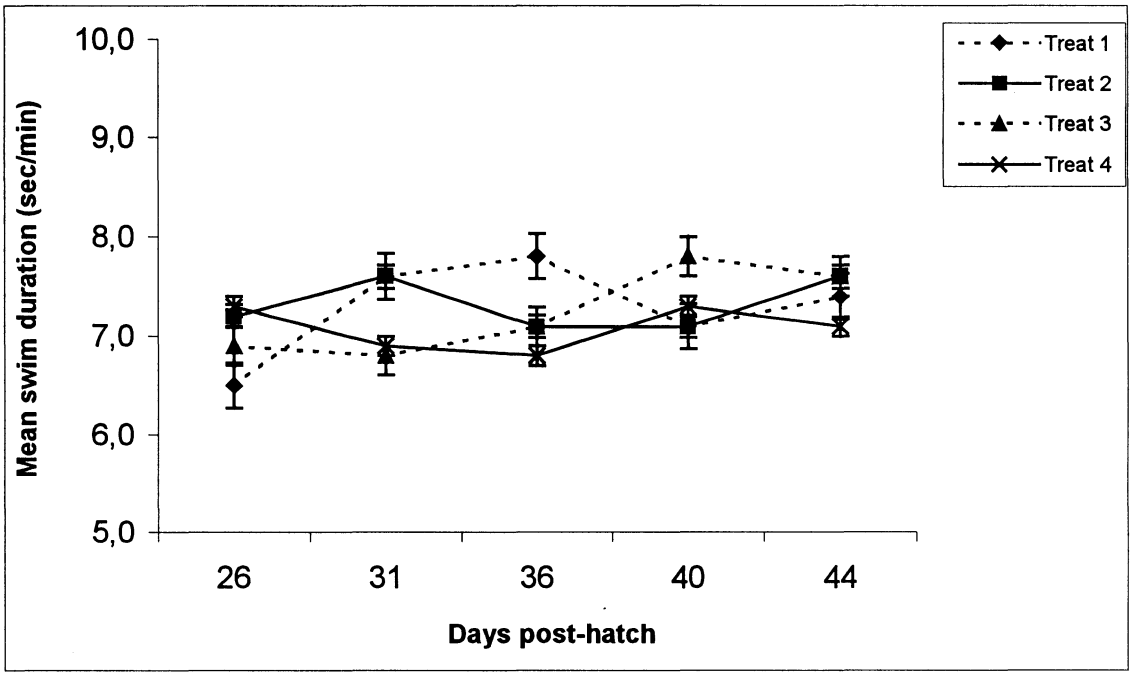
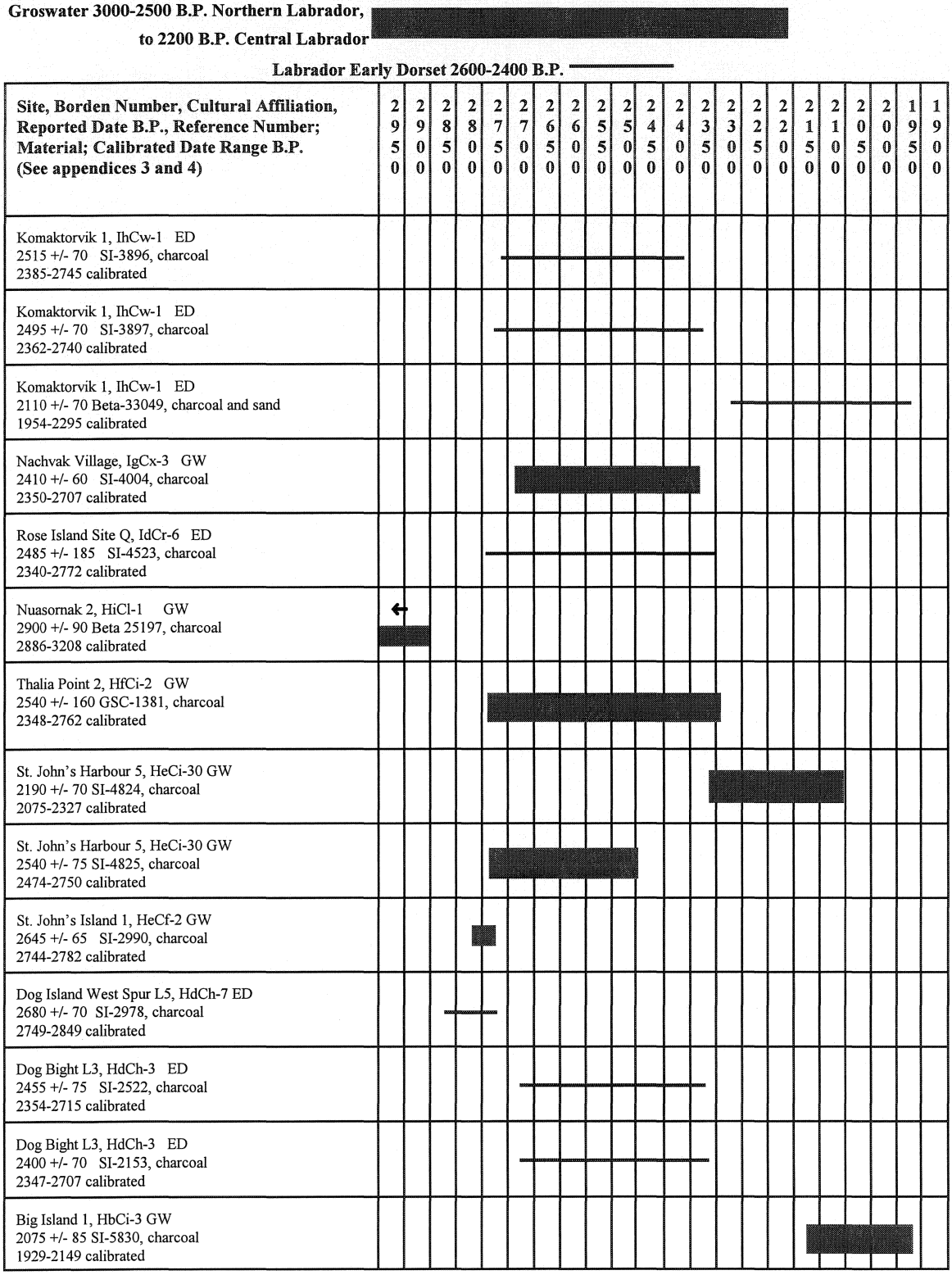


Figure 2.19 Mean **swim duration** of Atlantic cod larvae in different weaning treatments over age (days post-hatch) in **Experiment II**. Each symbol represents mean of 10 larvae observed per treatment per observational day. Vertical bars indicate S.E. See Figure 2.2 for details of feeding trials.

Figure 3.3: Calibrated Date Ranges B.P. for Groswater and Labrador Early Dorset



Site, Borden Number, Cultural Affiliation, Reported Date B.P., Reference Number; Material; Calibrated Date Range B.P. (See appendices 3 and 4)	2950	2900	2850	2800	2750	2700	2650	2600	2550	2500	2450	2400	2350	2300	2250	2200	2150	2100	2050	2000	1950	1900
Solomon Island 2, GlCe-6 GW 1930 +/- 95 SI-5831, charcoal and soil 1737-1989 calibrated																						→
Postville Pentecostal, GfBw-4 GW 2275+/- 65 SI-3560, charcoal 2159-2348 calibrated																						
Postville Pentecostal, GfBw-4 GW 2230 +/- 65 SI-3560, charcoal 2149-2339 calibrated																						
Red Rock Point 2, GeBk-2 GW 2200 +/- 120 SI-875, charcoal 2011-2345 calibrated																						
East Pompey Island 1, GcBi-12 GW 2490 +/-60 GSC-1367, charcoal 2347-2756 calibrated																						
East Pompey Island 1, GcBi-12 GW 2620 +/- 70 Beta -52072, charcoal 2736-2779 calibrated																						
Rattlers Bight 1 (Buxhall), GcBi-7 GW 2720 +/- 125 SI-930, charcoal 2747-2951 calibrated																						
Rattlers Bight 1 (Buxhall), GcBi-7 GW 2255 /- 55 SI-931, chrarcoal 2156-2343 caolibrated																						
Ticoralak 5, GbBn-7 GW 2400 +/- 160 GSC-1314, charcoal 2210-2739 calibrated																						
Ticoralak 3, GbBn-4 GW 2340 +/- 140 GSC-1217, charcoal 2156-2708 calibrated																						
Ticoralak 2, GbBn-2 GW 2660 +/- 140GSC-1179; CMC 315, charcoal 2623-2919 calibrated																						

Table 3.1 Pairwise Testing of Eight Dates from Groswater (GW) and Labrador Early Dorset (ED) Sites

Sites and 14C Results	Komaktorvik (SI 3896) ED	Komaktorivk 1 SI 3897) ED	Nachvak Village (SI 4004) GW	Rose Island Site Q (SI 4523) ED	Thalia Point (GSC 1381) GW	St. John's Harbour 5 (SI 4825) GW	Dog Bight L3 (SI 2522) ED	Dog Bight L3 (SI-2153) ED
Komaktorvik (SI 3896) ED								
Komaktorivk 1 SI 3897) ED	0.202							
Nachvak Village (SI 4004) GW	1.034	0.813						
Rose Island Site Q (SI 4523) ED	0.733	0.632	0.257					
Thalia Point (GSC 1381) GW	0.372	0.257	0.175	0.327				
St. John's Harbour 5 (SI 4825) GW	0.195	0.389	1.197	0.826	0.481			
Dog Bight L3 (SI 2522) ED	0.633	0.438	0.312	0.4	0	0.801		
Dog Bight L3 (SI-2153) ED	1.16	0.959	0.216	0.151	0.286	1.315	0.487	

see Appendix 3 and 4 for full date information

Looking specifically at the Nain region which shows a clear separation of site locations based on cultural groupings, there are only two Groswater dates from two different sites and two Labrador Early Dorset dates from one site to compare. These four dates are also indicated in Table 3.1 and thus also show potential for contemporaneity.

In conclusion, these dates indicate that Groswater and Labrador Early Dorset likely inhabited the same stretch of coastline during the same time period. In part this is in contrast to previously stated interpretations that implies Labrador Early Dorset were in these regions after the Groswater had departed (Cox 1978:106; Tuck and Fitzhugh 1986:164).

3.3 The Artifacts

While the site locations and dates point to the possibility of interaction between Groswater and Labrador Early Dorset, the artifacts should provide the strongest evidence for the nature of the interaction if it occurred.

The artifact analysis includes the examination of collections of the Provincial Museum of Newfoundland and Labrador. In total, 41 Groswater and 18 Labrador Early Dorset collections were examined in whole, or in part if some of the artifacts that made up the entire collection were unobtainable either being in off-site storage, or located at the Smithsonian Institution in Washington D.C.. The remaining whole collections not fully examined were located at the Smithsonian Institution in Washington D.C. or were unaccounted for. Based upon a general review of the Smithsonian collections at the beginning of this study, it was determined that there were no sites of major consequence still at the Smithsonian that would add significantly to this portion of the study. Few of the Smithsonian's holdings of Groswater and Labrador Early Dorset sites are from excavated sites, and many represent small surface collections with little diagnostic information.

Subsequent to an initial assessment of all collections, it was determined that five sites from each culture would be used for a more in-depth comparison. The choice of sites was based on the variety and number of artifacts available from the collections and the quality of the accompanying information. Sites of various sizes were chosen from different locations in an attempt to have a generally representative sample for each culture group. Sites in the Nain region were also specifically chosen given the observations

noted in the site location and date patterns. Further, Groswater sites found south of the overlapping coastline region where there are no Labrador Early Dorset sites were included to determine if there were artifact differences between the site locations of Groswater sites in the north versus the south. If differences are observed, one explanation may be because of interaction with the Labrador Early Dorset in the north. The ten sites chosen were:

Groswater	**Labrador Early Dorset**
St. John's Harbour 5, HeCi-30	Peabody Point 2, IiCw-28
Big Island, HbCl-3	Shuldham Island 14, IdCq-35
Solomon Island 2, GlCe-6	Iluvektalik Island 1, HhCk-1
Postville Pentecostal, GfBw-4	Iluvektalik Island 2, HhCk-2
Rattler's Bight (Buxhall), GcBi-7	Dog Bight L3, HdCh-3

Where information on artifacts was available in published and unpublished reports the data were incorporated as appropriate. Where reports were not available, new data were obtained from the collections as required. St. John's Harbour 5 was also included as one of the five Groswater sites examined since it was assumed that if this site was different from other Groswater sites it would become evident in this comparison.

3.3.1 Functional Comparison

Artifacts from each of the sites were broken down into functional tool categories and patterns were assessed. Table 3.2 provides a summary for Groswater sites. It indicates that for all the Groswater collections microblades are the highest represented tool category, followed by bifaces and utilized and ground flakes. While some collections did not contain all tool types (e.g. vessels and celts) this may be an indication of sample size rather than absence from these sites. Table 3.3 provides a summary for

Table 3.2: Tool categories represented in Groswater Sites

Site[1]	Endblades	Knives	Bifaces	Scrapers	Burin-like tools	Microblades	microblade cores	sideblades	utilized and	celts	vessels	other	total
Rattler's Bight (Buxhall) GcBi-7	4	9	43	7	2	299	7	6	46	1	0	17	**441**
	1%	2%	10%	2%	1%	68%	1.5%	1.5%	10%	0%	0%	4%	**100%**
Postville Pentecostal GfBw-4	38	2	156	57	31	880	38	35	473	0	2	18	**1730**
	2%	0%	9%	3%	2%	51%	2%	2%	27%	0%	0%	1%	**99%**
Solomon Island 2 GlCe-6	1	0	2	0	0	20	0	0	2	0	0	1	**26**
	4%	0%	8%	0%	0%	76%	0%	0%	8%	0%	0%	4%	**100%**
Big Island HbCl-3	1	0	9	1	0	15	0	1	1	0	1	1	**30**
	3%	0%	30%	3%	0%	50%	0%	3%	3%	0%	3%	3%	**98%**
St. John's Harbour 5 HeCi-30	24	5	51	25	13	268	12	7	54	5	0	12	**476**
	5%	1%	11%	5%	3%	56%	2.5%	1.5%	11%	1%	0%	3%	**100%**
Average % of all sites	**3%**	**0.5%**	**13.5 %**	**2.5%**	**1%**	**60%**	**1%**	**3.5%**	**12%**	**0%**	**0.5%**	**3%**	**99.5 %/ 100%**

[2]Postville Pentecostal: numbers based on Loring and Cox 1986 ; Loring and Cox list debitage but provide only percentages - not numbers; although Loring and Cox state that there were 1966 Groswater artifacts, only 1730 are sufficiently reported on in their artifact descriptions and hence is what is reported on here; The remaining site numbers are based on collection reviews.

Table 3.3: Tool categories represented in Labrador Early Dorset Sites

Site[2]	Endblades	Knives	Bifaces	Scrapers	Burin-like tools	Microblades	microblade cores	tip-flute spalls	utilized and ground flakes	celts	vessels and fragments	other	total
Dog Bight L3 HdCh-3	13	0	16	5	10	288	7	46	127	1	4	14	**531**
	2.5%	0%	3%	1%	2%	54%	1.5%	8.5%	24%	0%	1%	2.5%	**100%**
Iluvektalik Island 1 HhCk-1	53	14	60	5	20	615	5	101	197	1	29	2	**1104**
	5%	1.5%	5%	0.5%	2%	56%	0.5%	9%	18%	0%	2.5%	0%	**100%**
Iluvektalik Island 2 HhCk-2	0	0	9	1	3	36	0	2	5	1	2	1	**60**
	0%	0%	15%	2%	5%	60%	0%	3%	8%	2%	3%	2%	**100%**
Shuldham Island 14 IdCq-35	8	1	46	2	1	155	0	70	6	0	2	28	**319**
	2.5%	0.25%	14%	0.5%	0.25%	49%	0%	22%	2%	0%	0.5%	9%	**100%**
Peabody Point 2 IiCw-28	4	3	11	2	3	41	0	2	7	0	1	4	**78**
	5%	4%	14%	2.5%	4%	53%	0%	2.5%	9%	0%	1%	5%	**100%**
Average % of all sites	**3%**	**1%**	**10%**	**1.5%**	**3%**	**54%**	**0.5%**	**9%**	**12%**	**0.5%**	**1.5%**	**4%**	**100%**

[2]All site numbers are based on collection reviews.

Labrador Early Dorset sites and shows a similar pattern of tool use among the Labrador Early Dorset with microblades being the highest represented tool category, followed by utilized and ground flakes, and then bifaces.

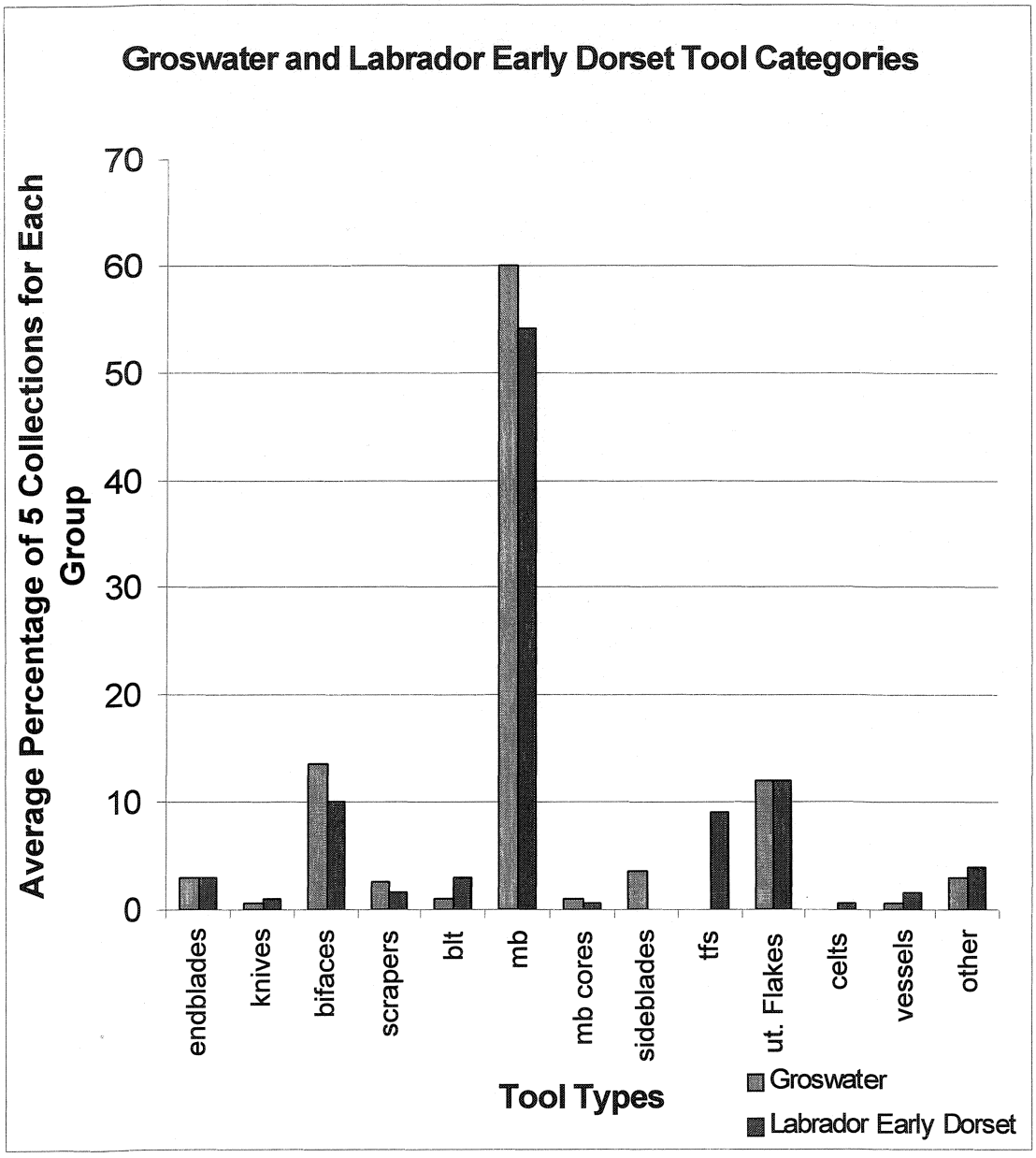
By comparing the artifacts at Groswater sites to the Labrador Early Dorset sites (Table 3.4 and Figure 3.4), it can be seen that, in general, the Groswater and Labrador Early Dorset are using similar types of artifacts. In addition, the percentage of each tool type within the assemblages is comparable. For example, both groups have microblades at over 50% of the assemblages, 12% of the assemblages are utilized and ground flakes and 3% of the assemblages are endblades. Differences include the presence of ovate side blades on Groswater sites and not Labrador Early Dorset sites, and tip-flute spalls (which are a product of the endblade style in Labrador Early Dorset rather than a tool category) on Labrador Early Dorset sites.

What these patterns in part indicate is that the artifacts we see in Groswater and Labrador Early Dorset are not indicative of different functions either between the groups or even largely within the groups. Looking at where the sites were located to see if any seasonal differences could be observed within each group also showed that each group maintained the same toolkit composition despite the site location on the landscape. Both Groswater and Labrador Early Dorset have a tool kit that is similar in composition, except for the presence or absence of ovate side blades and tip-flute spalls. This similarity is likely explained as being a result of a shared Paleoeskimo ancestry in which like activities are taking place in both groups within the same geographic regions.

Table 3.4 Comparison of Groswater and Labrador Early Dorset Tools

Group	Endblades	Knives	Bifaces	Scrapers	Burin-like tools	Microblades	Microblade cores	Sideblades	Tip-flute spalls	Utilized and ground flakes	Celts	Vessels	Other	Total
Groswater	3%	0.5%	13.5%	2.5%	1%	60%	1%	3.5%	0%	12%	0%	0.5%	3%	100 %
Labrador Early Dorset	3%	1%	10%	1.5%	3%	54%	0.5%	0%	9%	12%	0.5%	1.5%	4%	100 %

Figure 3.4: Comparison of Groswater and Labrador Early Dorset tools



As for indicators of interaction, there do not appear to be any anomalus patterns that show up in tool kit compositions in these ten sites. Further the composition of Groswater toolkits in overlapping regions with Labrador Early Dorset show no noticeable difference to those in the regions south of Nain. Had there been interaction, differences may have been observed between these geographic regions.

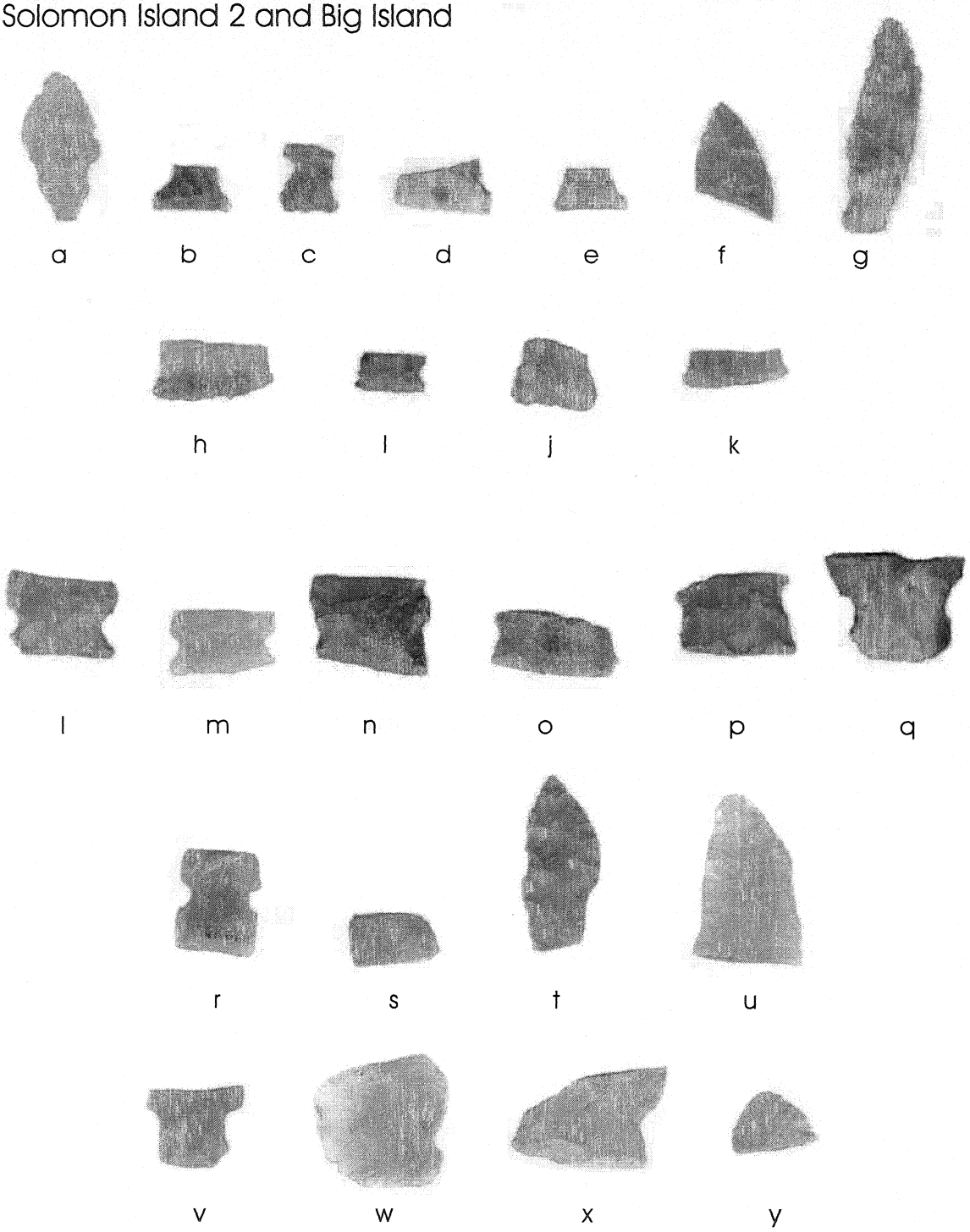
3.3.2 Stylistic comparison

Apart from functional comparisons, it might be expected that the stylistic attributes of tools may provide a stronger indication of interaction between two groups.

The culturally diagnostic artifacts chosen for a stylistic review between Groswater and Labrador Early Dorset are endblades, knives and bifaces, scrapers and burin-like tools. Each of these artifact classes contains unique stylistic attributes for both cultural groups, and as such, are often used as cultural indicators. Artifacts such as microblades and utilized flakes are not used in this comparison as the differences are not as obvious, and could be a result of a shared Palaeoeskimo ancestry or a result of a manufacturing process that allows for little stylistic variability.

Beginning with an examination of the endblades, knives and bifaces, it can be observed in Figures 3.5 to 3.8, that there are similar patterns found within the all of the five Groswater sites examined. The artifacts found at Rattlers Bight (Figure 3.5 a-q), Solomon Island (Figure 3.5 r-s) and Cape Little (Figure 3.5 t-y) are generally smaller than the ones from Postville Pentecostal (Figure 3.6 a-u and Figure 3.7 a-m). This may be an indication of geographic location or temporal placement of these sites. Despite the size differences between the artifacts in the individual site collections there are still common

Figure 3.5
Groswater Endblades, Knives and Bifaces from Rattler's Bight, Solomon Island 2 and Big Island



Legend
a-q Rattler's Bight, GcBi-7 (all examples)
r-s Solomon Island 2, GlCe-6 (all examples)
t-y Big Island, HbCl-3 (all examples)

0 1 2 3 4 5 cm

Figure 3.6
Sample of Groswater Endblades, Knives and Bifaces from Postville Pentecostal, GfBw-4

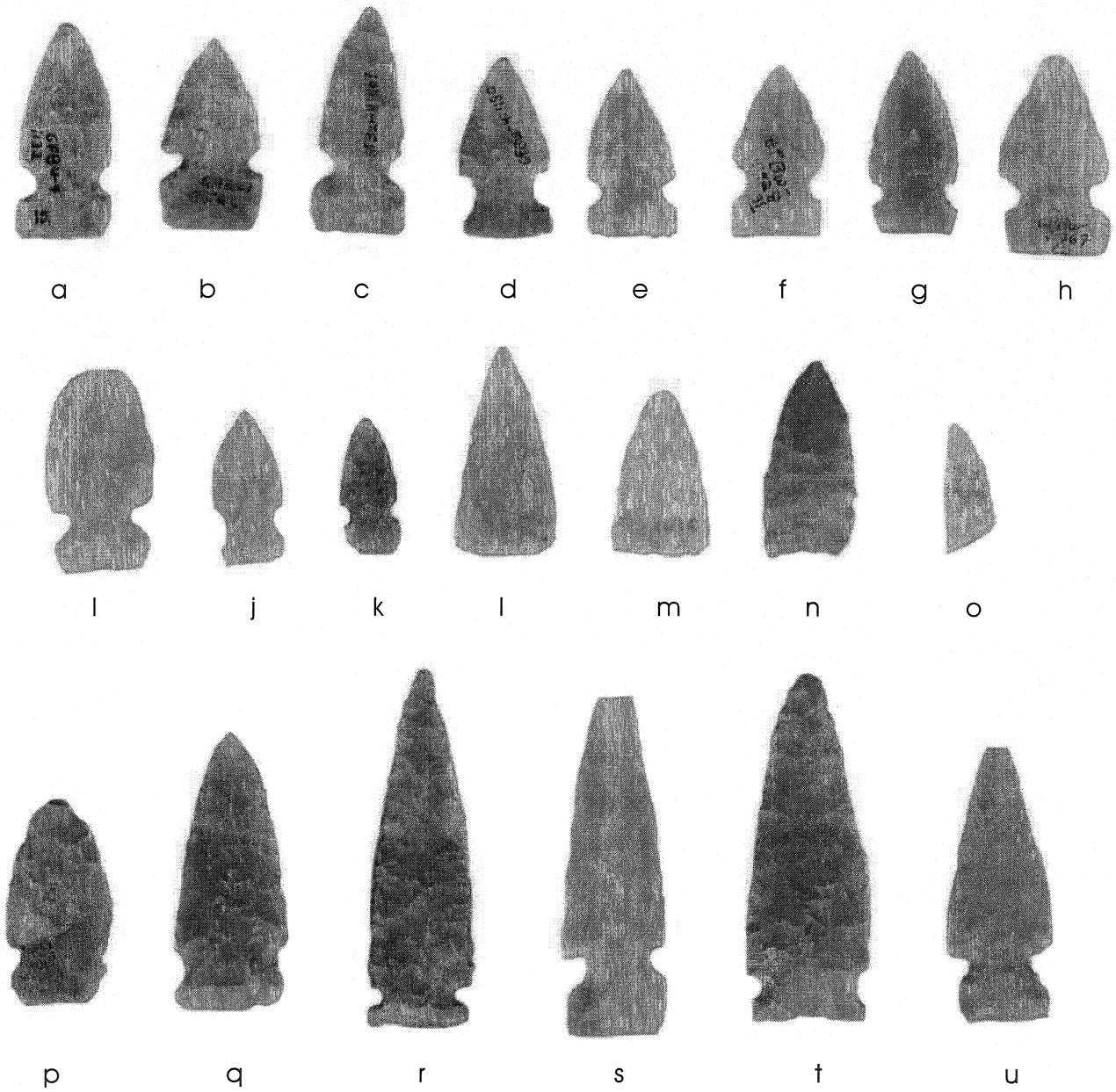


Figure 3.7
Sample of Groswater Endblades, Knives and Bifaces from Postville Pentecostal, GfBw-4

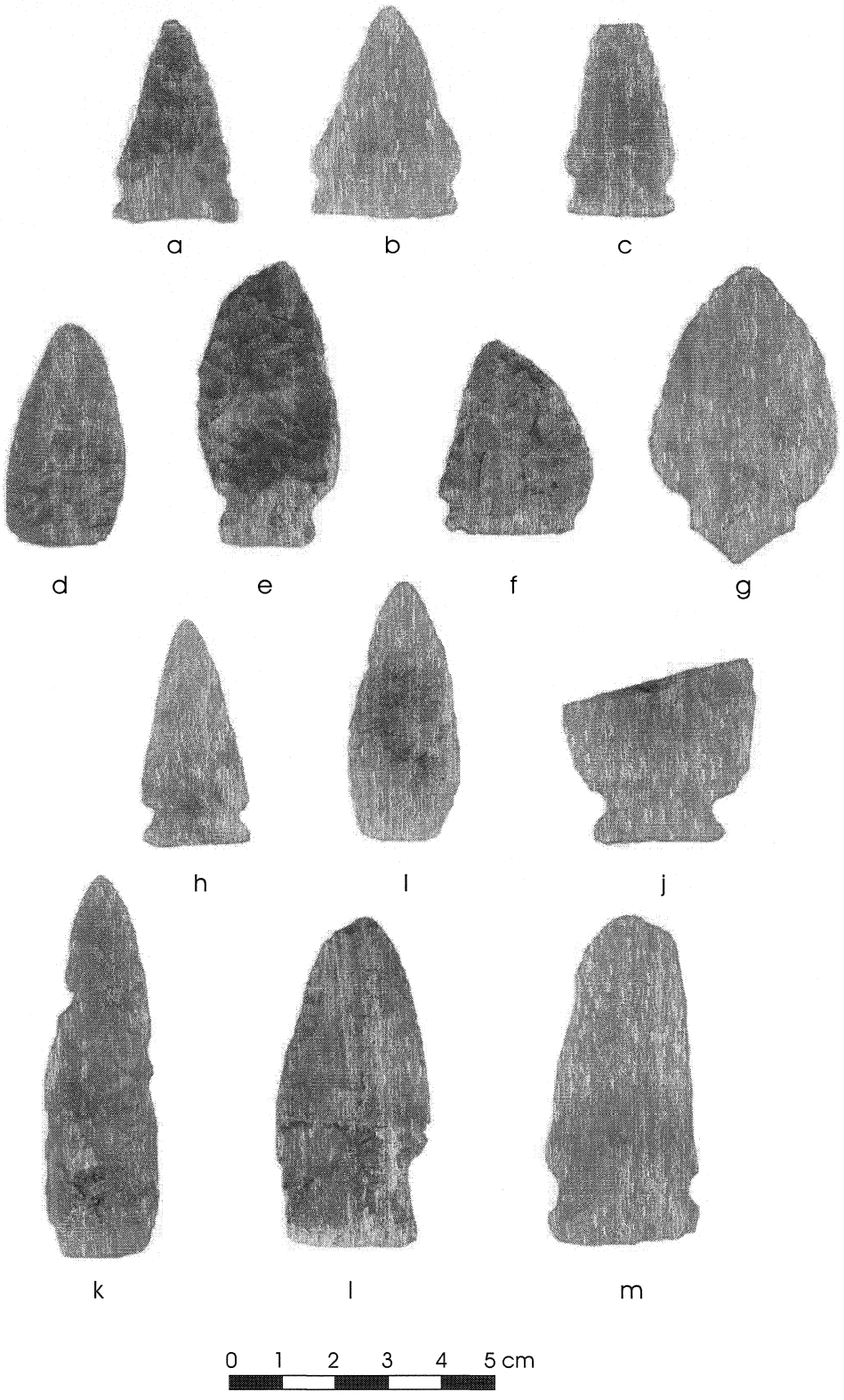
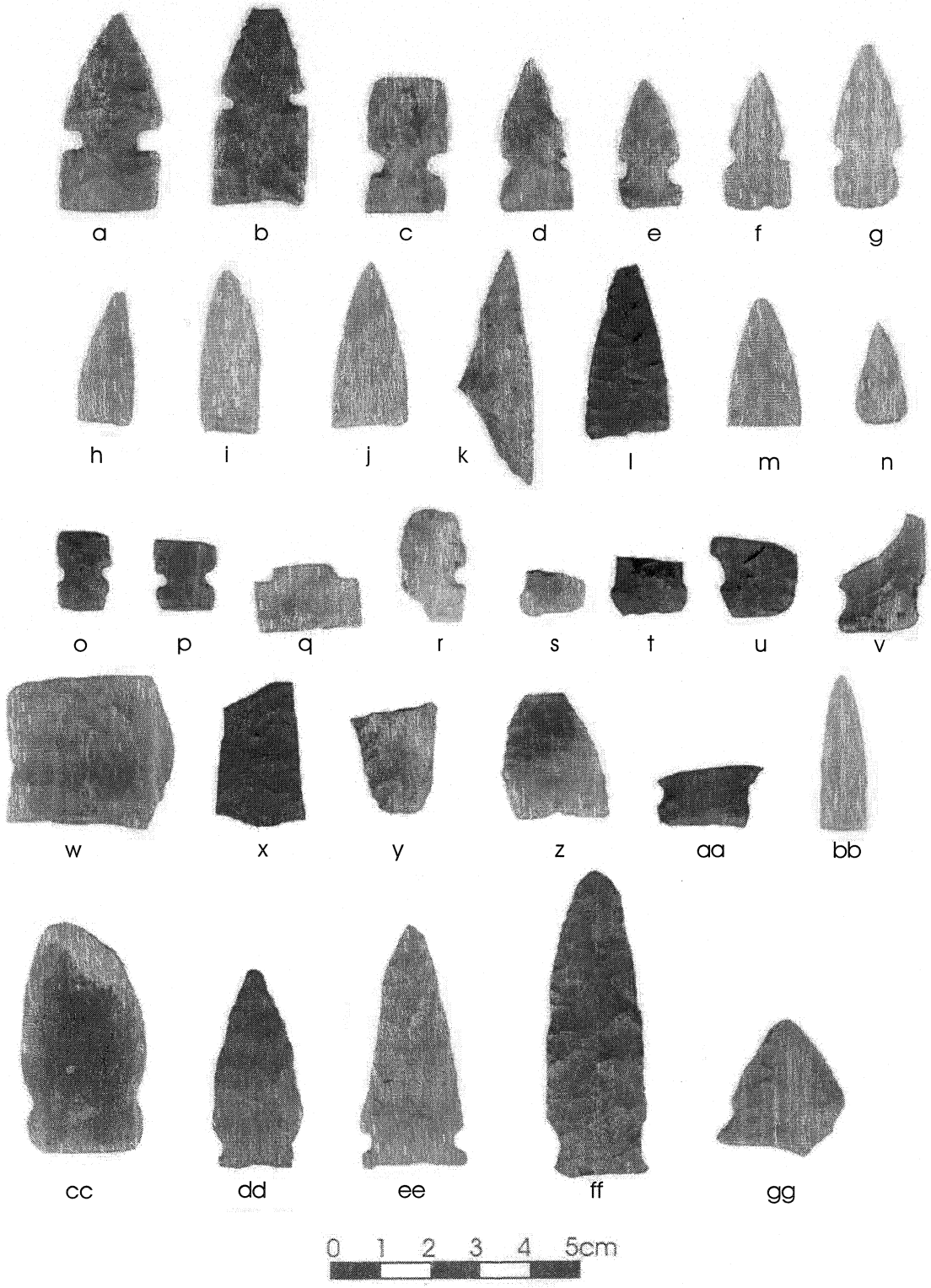


Figure 3.8
Sample of Groswater Endblades, Knives and Bifaces from St. John's Harbour 5, HeCi-30



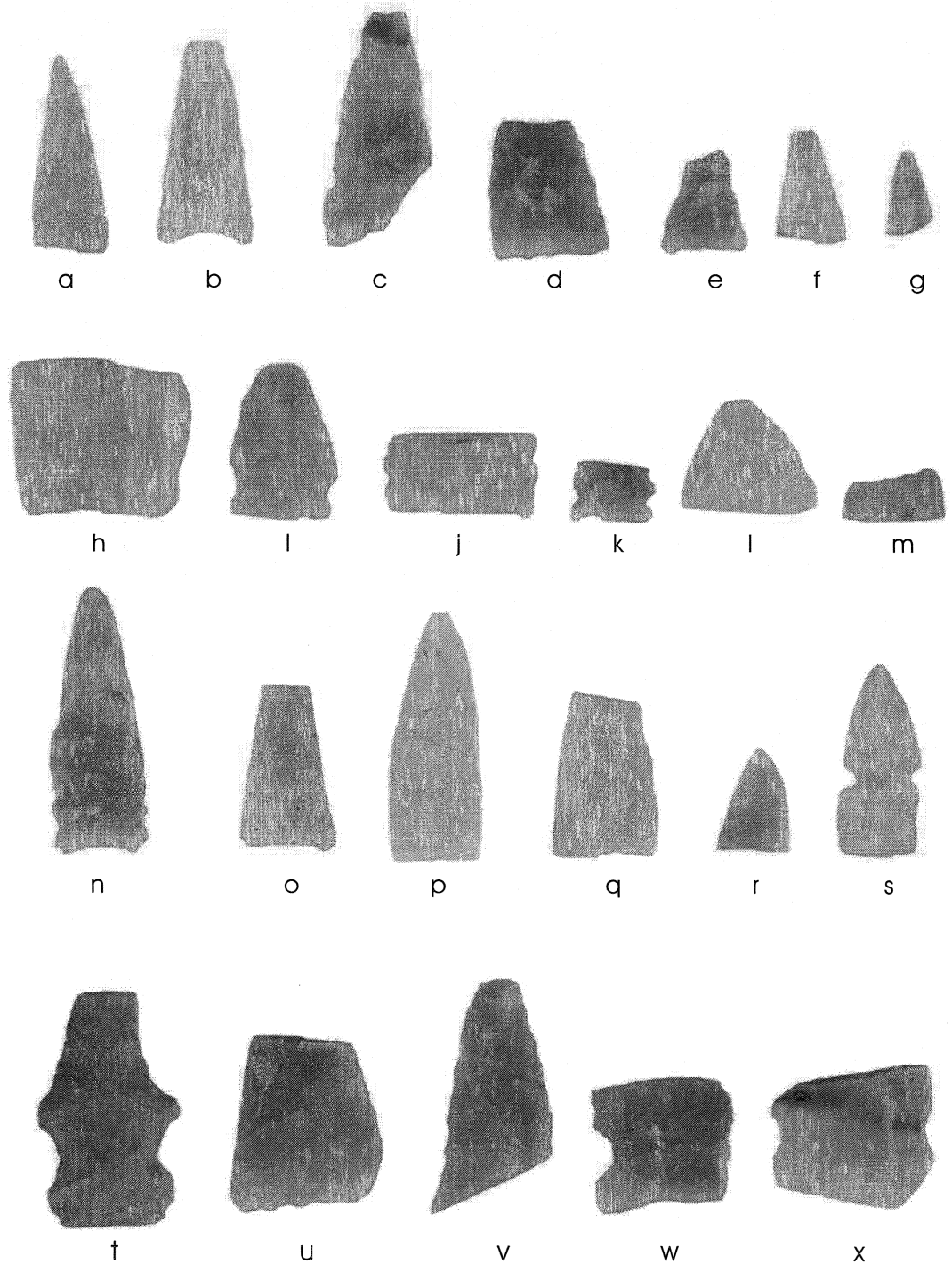
elements such as box-based points and asymmetric bifaces. Many of the common elements are present in at least two or more of the sites, for example the triangular shaped endblades from St. John's Harbour 5 (Figure 3.8 h-j) are similar to those from Postville Pentecostal (Figure 3.6 l-n).

In a general comparison of endblades, knives and bifaces for the Labrador Early Dorset sites (Figures 3.9 and 3.10) similarities between all sites are also observed. Labrador Early Dorset endblades tend to be tip-fluted and long, thin and triangular in shape. Biface and knife bases range from single to multiple notched forms and are generally symmetrical in shape.

Comparing Groswater and Labrador Early Dorset tool styles illustrates the unique characteristics of each. Groswater endblades are characterised by box-bases, triangular shape and asymmetric knives are side notched. The Labrador Early Dorset endblades are tip-fluted, with straight to slightly concave bases and knives and bifaces are symmetric and multi-notched. While the triangular shaped endblades in the Groswater collections (e.g. Figure 3.6 l-n and Figure 3.8 h-j) are similar in shape to those in the Labrador Early Dorset collections (Figure 3.10 h-k) the latter are tip-fluted. Notching is present on specimens in both groups, but is wider among the Groswater specimens, and in some cases, multiple on Labrador Early Dorset tools.

Examining the scrapers from both groups indicates that the Groswater collections (Figure 3.11) contain a wide variety of shapes. The most characteristic is the eared-type scraper seen throughout the sites (e.g. Figure 3.11 e, j-q, s, w-cc). There are also a variety of triangular shaped and rectangular shaped scrapers throughout. In general, however, the

Figure 3.9
Labrador Early Dorset Endblades, Knives and Bifaces from
Dog Bight L3, Peabody Point 2 and Shuldham Island 14



Legend
a-m Dog Bight L3, HdCh-3 (all examples)
n-s Peabody Point 2, IiCw-28 (all examples)
t-x Shuldham Island 14, IdCq-35 (all examples)

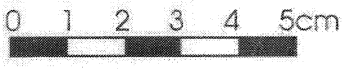
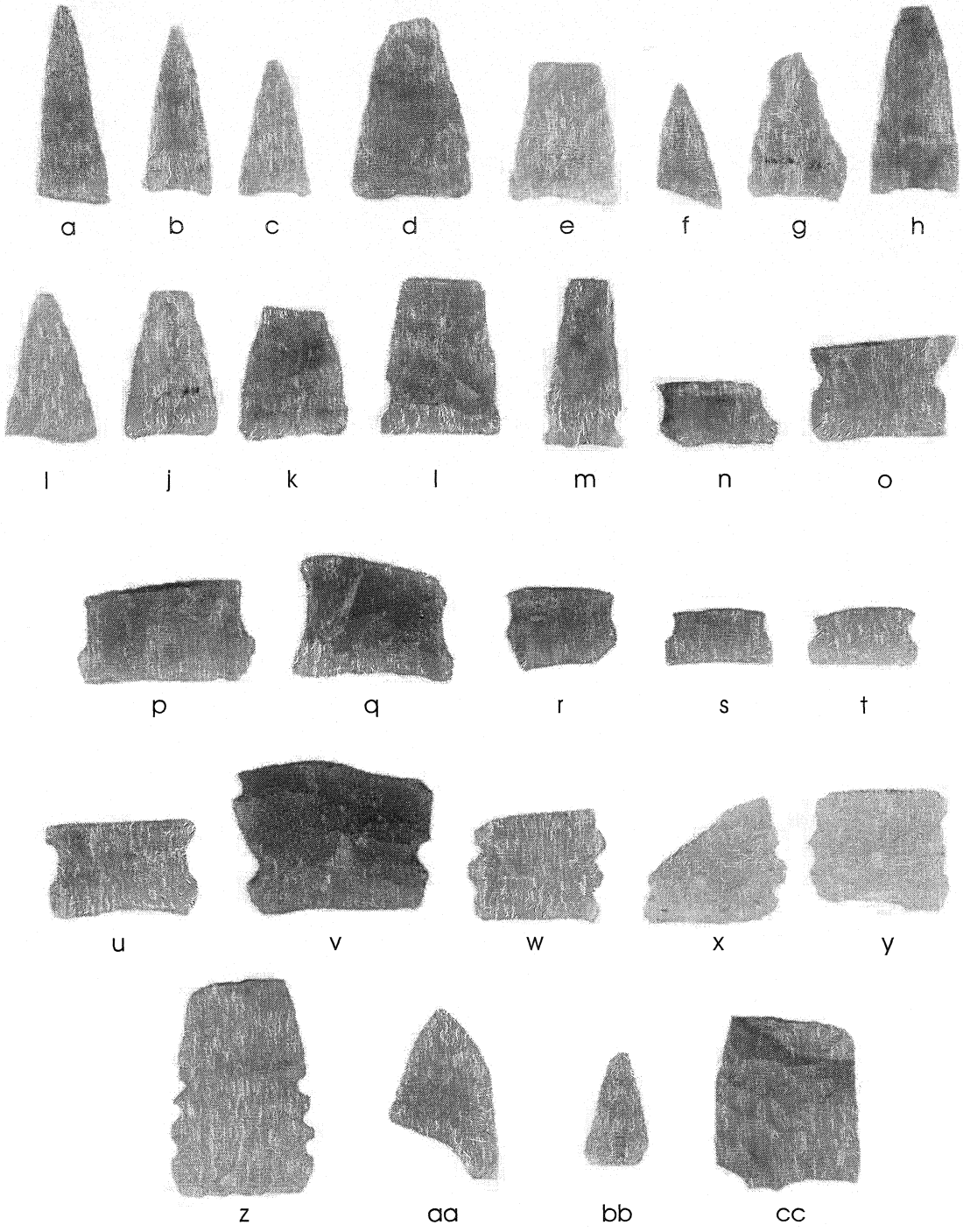
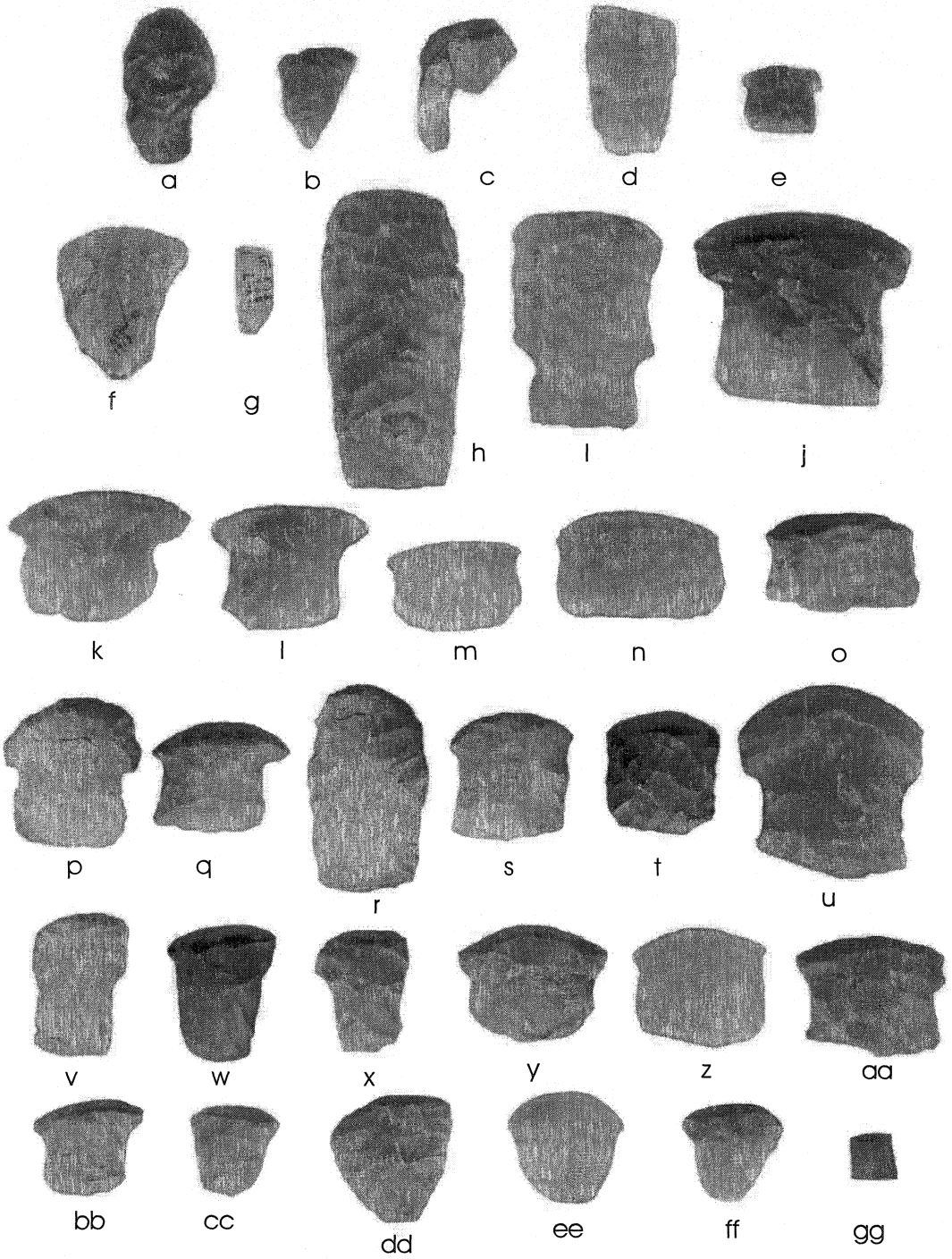


Figure 3.10
Labrador Early Dorset Endblades, Knives and Bifaces from Illuvektalik 1 and 2



Legend
a-y Illuvektalik 1, HhCk-1(all examples)
z-cc Illuvektalik 2, HhCk-2 (all examples)

Figure 3.11
Groswater Scrapers from Rattler's Bight, Postville Pentecostal, Big Island and St. John's Harbour 5



Legend
a-e Rattler's Bight, GcBi-7 (all examples)
f-t Postville Pentecostal, GfBw-4 (representative sample)
u Big Island, HbCl-3 (only example)
v-gg St. John's Harbour 5 (representative sample)

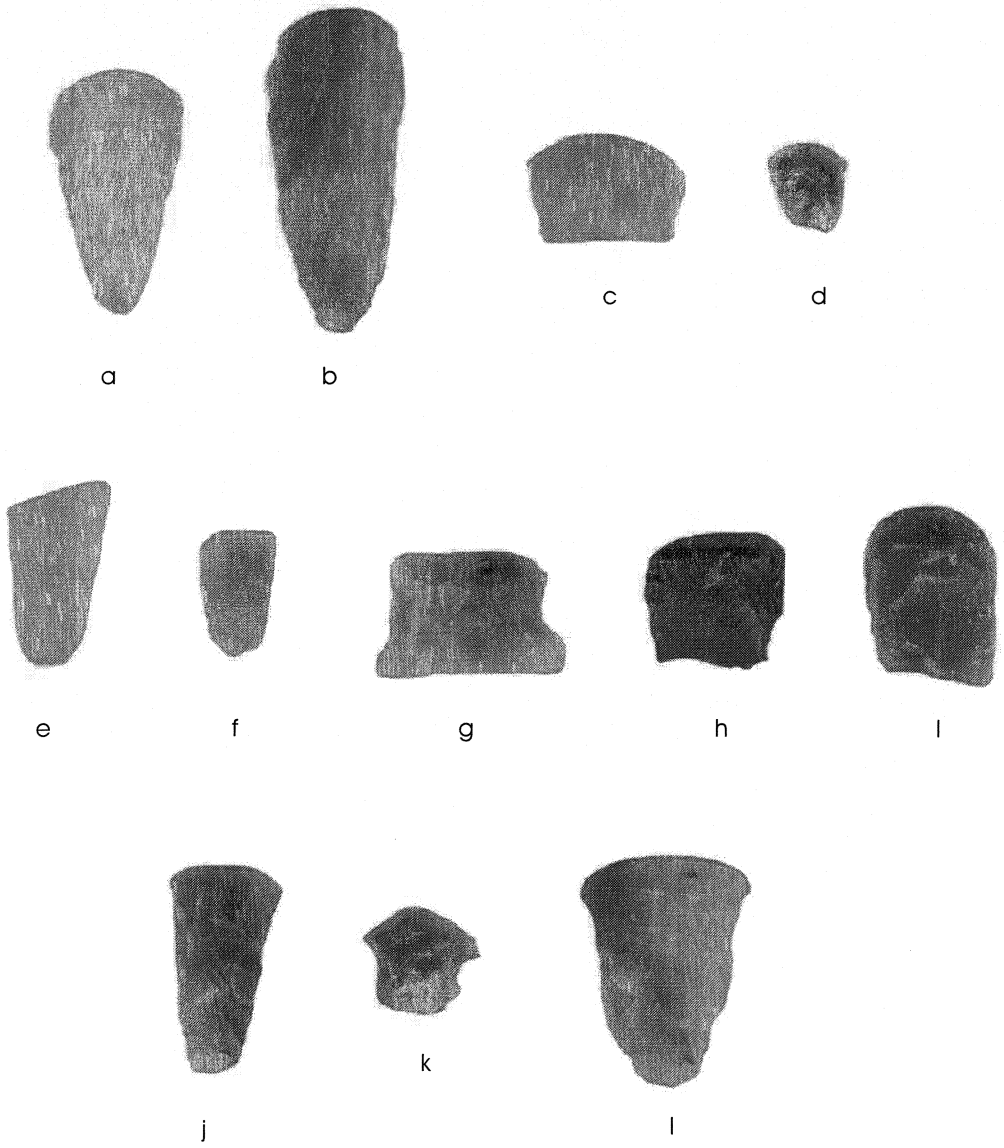
Groswater scrapers tend to be square to rectangular in form. In contrast, the scrapers found in the Labrador Early Dorset sites (Figure 3.12) tend to have a longer, more triangular shape, with more rounded working ends, or a slight flaring. Overall each group has scrapers characteristically unique to it and points to separate styles.

The burin-like-tools, also exhibit unique characteristics within each group. Groswater burin-like-tools (Figure 3.13) tend to be manufactured using a chipping and grinding technique. They often appear to have been manufactured utilizing what were formerly bifaces, knives or endblades (e.g. Figure 3.13 d-i, o-q).

The burin-like-tools represented in the Labrador Early Dorset collections (Figure 3.14) tend to be mainly fully ground and are longer, more narrow and rectangular in shape in comparison to the Groswater burin-like-tools.

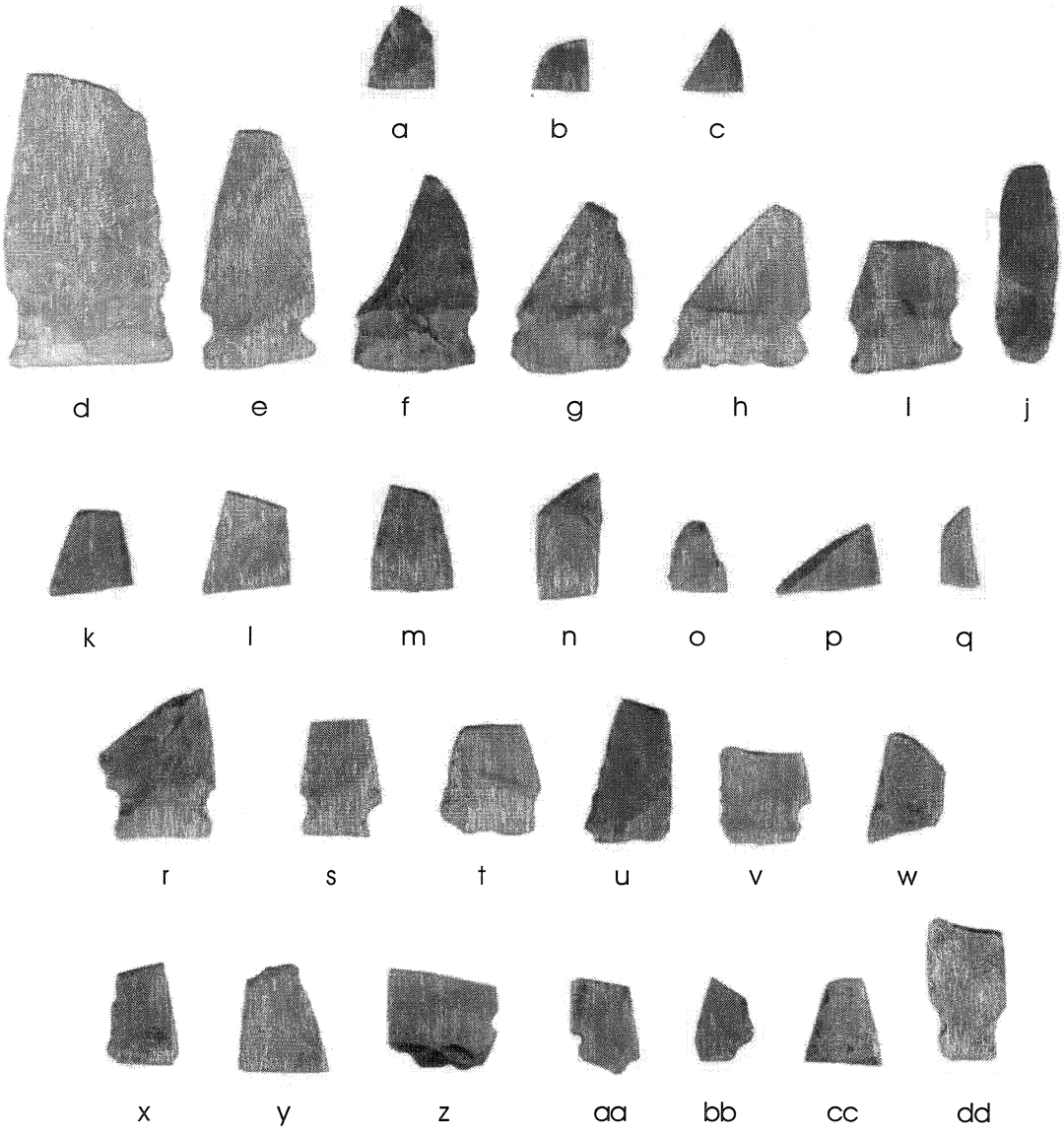
What the comparison of endblades, knives and bifaces, scrapers and burin-like tools within and between Groswater and Labrador Early Dorset indicates is that each group maintained unique stylistic choices for these tools. For the Groswater, there once again do not appear to be too many differences from those sites in the north and the south with the exception of size. More importantly in terms of identifying interaction through the artifact styles, there does not appear to be any obvious mixing of styles between the groups, including in the Nain region. If interaction is taking place, it is not resulting in an exchange of stylistic ideas.

Figure 3.12
Labrador Early Dorset Scrapers from Dog Bight L2,
Illuvektalik 1 and 2, Peabody Point 2 and Shuldham Island 14



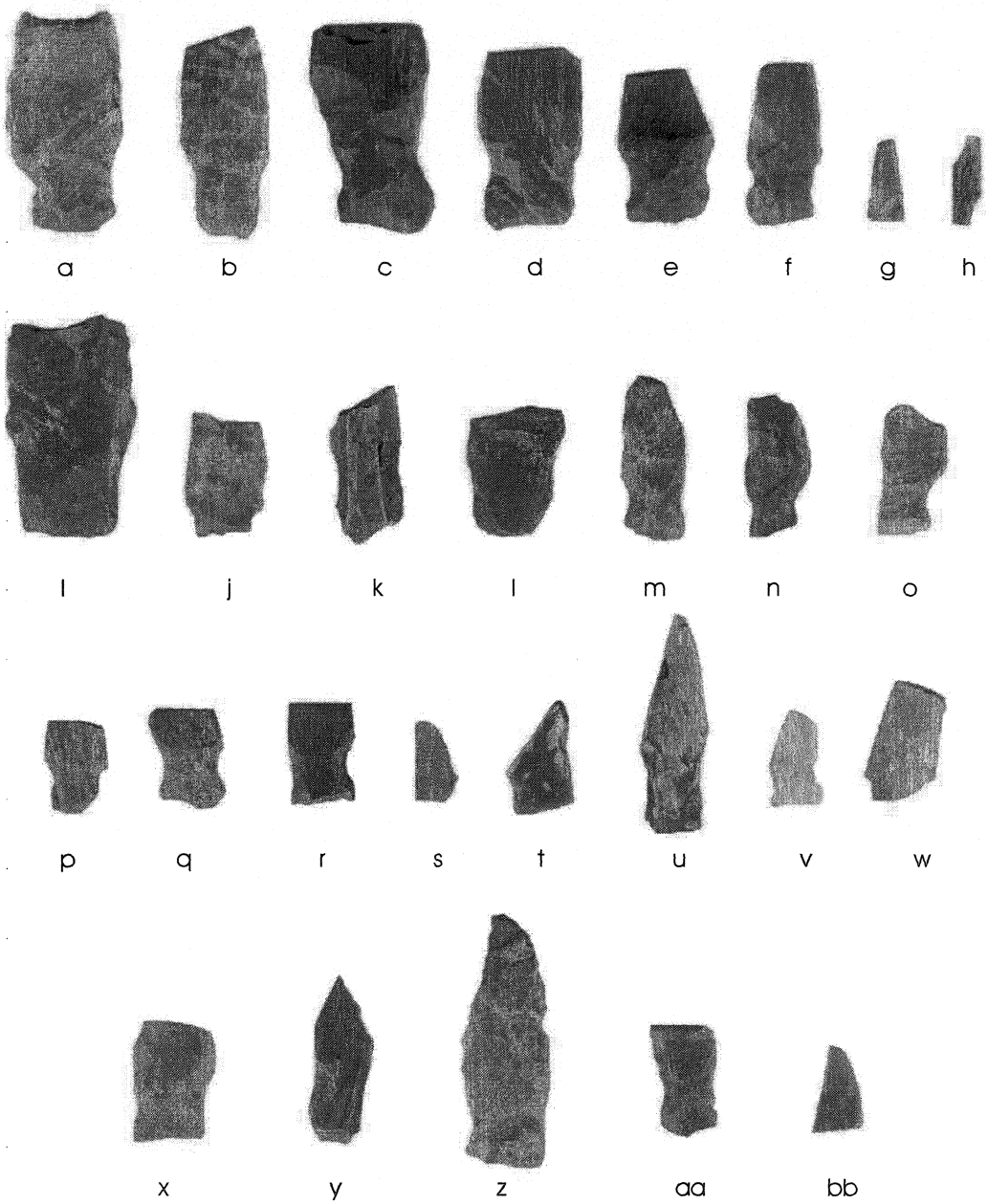
Legend
a-d Dog Bight L3, HdCh-3 (all examples)
e-i Illuvektalik 1, HhCk-1(all examples)
j Illuvektalik 2, HhCk-2 (only example)
k Peabody Point 2, IiCw-28 (only example)
l Shuldham Island 14, IdCq-35 (only example)

Figure 3.13
Groswater Burin-like-tools from Rattler's Bight, Postville Pentecostal and St. John's Harbour 5

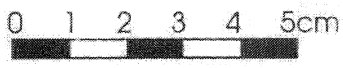


Legend
a-c Rattler's Bight, GcBi-7 (all examples)
d-n Postville Pentecostal, GfBw-4 (representative sample)
o-aa Big Island, HbCl-3 (only example)
v-gg St. John's Harbour 5 (representative sample)

Figure 3.14
Labrador Early Dorset Burin-like-tools from Dog Bight L3, Illuvektalik 1 and 2 and Peabody Point 2



Legend
a-h Dog Bight L3, HdCh-3 (all examples)
i-w Illuvektalik 1, HhCk-1 (all examples)
x-z Illuvektalik 2, HhCk-2 (all examples)
aa-bb Peabody Point 2, IiCw-28 (all examples)



3.3.3 Lithic Material Use

Evidence of interaction may also be indicated in a comparison of lithic raw material use in each cultural group. The review of lithic raw material use in both Groswater and Labrador Early Dorset is of particular interest as Fitzhugh indicated that the lithic raw material use at St. John's Harbour 5 in part led him to conclude that it was a site undergoing influence from Labrador Early Dorset (Fitzhugh 1981:42-43). Tables 3.5 and 3.6 show the distribution of lithic materials between the sites for both groups.

As these tables indicate, lithic raw material use is similar among the Groswater sites, as it is among the Labrador Early Dorset sites. However, a comparison of the two groups shows distinct preferences for certain materials. The primary difference between the two groups, as shown in Table 3.7 and Figure 3.15, is that the Groswater use significantly higher proportions of chert than Labrador Early Dorset who used Ramah almost exclusively. In addition, Labrador Early Dorset used nephrite, primarily for their burin-like-tools, while the Groswater used very little and in few finished artifacts.

Once again the geographic location of the Groswater sites does not appear to affect the choice of raw material. Had interaction been occurring it might be expected to show up in a difference of material choice in the overlapping areas. Either there would be an increase in Ramah for northern Groswater sites, or an increase in chert in the Labrador Early Dorset sites, and possibly more so in the Nain region. Accessibility to the sources in the common areas does not appear to be an issue as both are utilizing the same types of materials, just in differing amounts. Further, as the working properties of both Ramah and chert are generally similar, the difference in preferred material appears to point to cultural choices.

Table 3.5: Lithic Materials used on Five Labrador Groswater Sites

Site	Ramah	Chert	Quartz Crystal	Quartzite	Nephrite	Schist/Slate	Soapstone	Other	Total
Rattler's Bight (Buxhall) GcBi-7	160 36%	196 44%	80 18%	2 0.5%	0 0%	3 1%	0 0%	0 0%	441 99.5%
Postville Pentecostal[2] GfBw-4	638 37%	919 53%	160 9%	2 0%	0 0%	0 0%	2 0.5%	9 0.5%	1730 100%
Solomon Island 2 GlCe-6	7 27%	16 61%	1 4%	0 0%	0 0%	2 8%	0 0%	0 0%	26 100%
Big Island HbCl-3	10 33%	12 40%	7 23%	0 0%	0 0%	0 0%	1 3%	0 0%	30 99%
St. John's Harbour 5 HeCi-30	141 30%	256 54%	57 12%	2 0.5%	17 3%	2 0.5%	0 0%	1 0%	476 100%
average % for all 5 sites	33%	50%	13%	0.5%	0.5%	2%	1%	0%	100%

[2]Postville Pentecostal: numbers based on Loring and Cox 1986
* 1966 artifacts were noted for Postville Pentecostal (Loring and Cox 1986:71), however data was only presented for 1289 artifacts. In the general description it is noted that there is 56% chert, 35% Ramah, 7% Quartz Crystal, 2% Slate and 1% of remaining material including quartz, soapstone, nephrite, asbestos, sandstone, and exotic chert. There is insufficient detail to determine the total number of artifacts for each material.

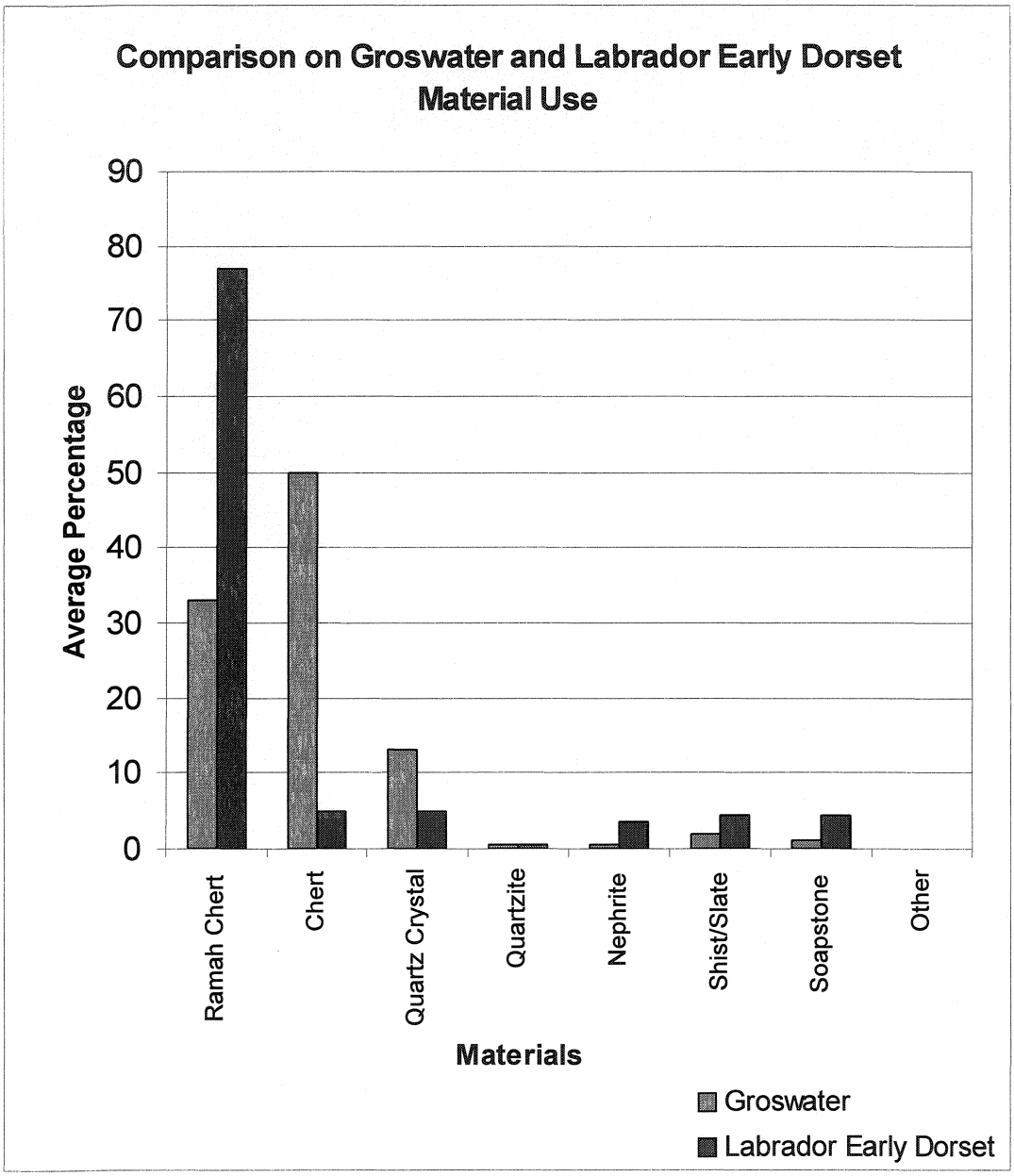
Table 3.6: Lithic Materials used on Five Labrador Early Dorset Sites

Site	Ramah	Chert	Quartz Crystal	Quartzite	Nephrite	Schist/Slate	Soapstone	Other	Total
Dog Bight L3 HdCh-3	325	60	68	12	18	44	4	0	531
	61%	11%	13%	2%	4%	8%	1%	0%	100%
Iluvektalik Island 1 HhCk-1	944	14	29	0	27	59	29	0	1102
	86%	1%	2.5%	0%	2.5%	5.5%	2.5%	0%	100%
Iluvektalik Island 2 HhCk-2	41	5	3	0	5	4	2	0	60
	69%	8%	5%	0%	8%	7%	3%	0%	100%
Shuldham Island 14 IdCq-35	277	2	2	0	2	6	30	0	319
	87%	0.5%	0.5%	0%	0.5%	2%	9.5%	0%	100%
Peabody Point 2 IiCw-28	65	3	2	0	2	1	5	0	78
	83%	4%	3%	0%	3%	1%	6%	0%	100%
Average % for all 5 sites	77%	5%	5%	0.5%	3.5%	4.5%	4.5%	0%	100%

Table 3.7 Comparison of Raw Material Use from Five Groswater and Five Labrador Early Dorset Sites

Site	Ramah	Chert	Quartz Crystal	Quartzite	Nephrite	Schist/Slate	Soapstone	Other	Total
average % for 5 Groswater sites	33%	50%	13%	0.5%	0.5%	2%	1%	0%	100%
Average % for 5 Labrador Early Dorset sites	77%	5%	5%	0.5%	3.5%	4.5%	4.5%	0%	100%

Figure 3.15: Comparison of Raw Material Use from Five Groswater and Five Labrador Early Dorset Sites



3.4 House Styles

As noted in Chapter 2, detailed information on house styles for both groups is limited. The published information reports that the Postville Pentecostal site (GfBw-4) provides the best evidence for Groswater habitation features in Labrador. The ten features found at Postville Pentecostal include mid-passage or axial hearth features made of stone slabs (Loring and Cox 1986:68-69). Labrador Early Dorset structural information has been reported from Illuvektalik 1 (HhCk-1), where an apparent winter dwelling is located (Cox 1978:107), and Komaktorvik (IhCw-1) where three houses are reported (Cox 2002:4).

In reviewing the SRF during this study several other features and houses previously not published were noted, including the house feature reported at St. John's Harbour 5 (Appendix 1). Appendix 3 indicates that there are 25 Groswater sites with reported features. Of these, 16 sites have clear or possible house structures, five with only hearths, one site that has a small arrangement of rocks with an unclear function and two sites with features but with problematic cultural associations. As indicated in Appendix 4 there are 28 Labrador Early Dorset sites with reported features. Of these, 24 indicate clear or possible house features, two have only hearths, one has a line of boulders with an unclear function, and one contains a midden.

The Groswater sites are generally described as only having one or two structures, except for Postville Pentecostal which has four, often with axial features or parallel rows of slabs, and paving stones. The Labrador Early Dorset sites are also reported as having some with mid-passage features, some without, and some with the presence of paving

stones. These observations are in contrast with Cox (1978) who indicated that Labrador Early Dorset had no mid-passage features.

In general both groups have a variety of features associated with their sites. Both groups have some overlaps in traits such as some mid-passage features, and house sizes and numbers that indicate small group sizes. However, there is such variability in how the houses are described that it is hard to pinpoint characteristics that are so clearly Groswater or Labrador Early Dorset that their presence in the other group's locations would indicate interaction. Further, the similarities between the house features are likely more indicative of a shared common Palaeoeskimo ancestry rather than a result of interaction.

3.5 Anomalies

While the above information tends to point to differences in the material culture between Groswater and Labrador Early Dorset sites and collections there are anomalies that require further discussion.

Regarding the sites where Groswater and Labrador Early Dorset are indicated as at the same location, it should be noted that often these sites are multi-component which makes it difficult to separate all of the materials into distinct cultural groups. In the Saglek Bay region an examination of the plates for these sites (Tuck 1975:211-265) indicates that there are several that have both Groswater and Labrador Early Dorset style artifacts, such as Rose Island E, W, X, Y and Bear Island. However the majority of these collections are also quite large and their stratigraphy makes it difficult to separate the contexts for the artifacts. A more thorough re-examination of these collections is

required to determine whether there were clear and separate uses of the sites by each group, or whether these sites are an indication of simultaneous site occupation by both Groswater and Labrador Early Dorset.

The Early Dorset site Peabody Point 2 has two artifacts that appear to be Groswater in form. One endblade (Figure 3.9 s) is box-based in style, with no tip-fluting and is made from Ramah chert. The second artifact, a scraper (Figure 3.12 k) is a small version of the flared-eared type scraper is similar in style to those found on the Groswater sites (e.g. Figure 3.11 e, cc and ff); however is made from quartz crystal.

With both of these artifacts, it appears that they might indicate a possible Groswater connection on a site previously described only as Labrador Early Dorset. Given that there are only two artifacts at Peabody Point 2, however, they could just as easily be a result of site reuse, or scavenging from other sites by the Labrador Early Dorset. Without clearer information on their contexts, this cannot be fully confirmed.

The burin-like-tool preform found at St. John's Harbour 5 (Figure 3.13 aa) is very similar in shape to those located on Labrador Early Dorset sites (e.g. Figure 3.14 a, b, m-o). However, as it is made of slate rather than nephrite, this shape on a Groswater site could be explained as a result of the material's working properties, just as easily as the result of interaction with Labrador Early Dorset.

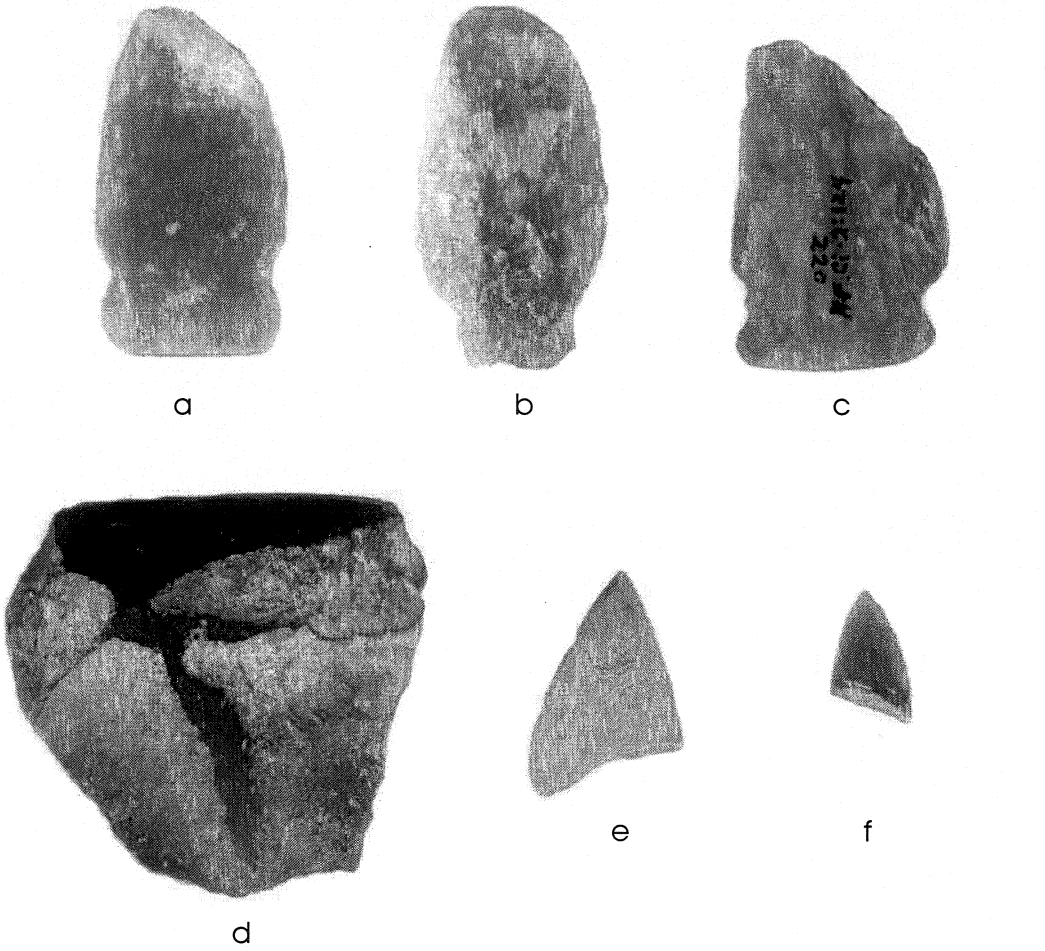
At the St. John's Harbour 5 site, the use of nephrite was noticed by Fitzhugh (1980a) as unusual for Groswater sites for burin-like-tools. Reviewing the site collection, however, indicates that nephrite is not used for burin-like-tools, but rather appears only in the form of ground flakes and one ground nephrite knife. A review of all the other

Groswater collections demonstrates that in general there is little nephrite use, but when it does occur it is also as ground flakes. While St. John's Harbour 5 does have slightly more nephrite, the use of it is not in keeping with its use at Labrador Early Dorset sites which is in the form of burin-like-tools.

A nephrite knife found at St. John's Harbour 5 (Figure 3.16 a) initially appeared to be unique since there was no equivalent in the four other Groswater sites examined above. However, a review of all other Groswater sites produced two more examples that are similar in form. One of these is from Rose Island, Site W (Figure 3.16 b) and the other is from Thalia Point (Figure 3.16 c). Both of these sites are multicomponent sites with a confirmed Groswater component (see Appendix 3). A third example was found by Lisa Rankin in 2001 at the Porcupine Strand 8 site (FkBg-15) located in the Sandwich Bay region in southern Labrador (Rankin, personal communication 2002).

In comparison, nephrite use on Labrador Early Dorset sites is seen in Figure 3.16 d which shows a celt found at Iluvektalik 1. Figure 3.16 f is an example of a ground nephrite tip from Shuldham Island 14 that is similar in shape and style to a ground slate artifact (Figure 3.16 e) found at the Labrador Early Dorset site of Peabody Point 2. While the nephrite knife found at St. John's Harbour 5 may have initially been considered as an example of something possibly originating with the Labrador Early Dorset, the presence of this form at other Groswater sites, and not at any of the Labrador Early Dorset sites examined appears to suggest this is something unique to Groswater. Further, the form, if not the material and method of manufacturing, is consistent with other asymmetric knives found on Groswater sites (e.g. Figure 3.7 e).

Figure 3.16
A Selection of Groswater and Labrador Early Dorset Ground Nephrite and Slate Artifacts from Labrador



3.6 Chapter Summary

The conclusions that can be drawn from this chapter are as follows:

1) As demonstrated in a review of site locations and dates, the possibility exists that Groswater and Labrador Early Dorset distribution overlapped during the same time period.

2) However, within these regions, and especially evidenced in the Nain region, there appears to be a difference in specific site location selection, with Groswater largely on the inner islands and Dorset on the outer islands.

3) Both Groswater and Labrador Early Dorset have similar functional composition in their tool kits. A review of collections based on their site locations also eliminated the possibility that the differences were attributed to only one culture using different toolkits at different times of the year. With all sites having similar tool kit compositions it would suggest sites were used in similar manners by both groups despite their location.

4) While both Groswater and Labrador Early Dorset have similar functional tool kits, they utilize stylistically very different artifacts. Each group appears to maintain relatively separate identities as evidenced in their tool styles.

5) The material composition of the tool kits points to a preference of materials unique to each group. In addition, there are no perceived changes in the material use patterns in areas where both groups overlap suggesting little impact on each other's material use patterns.

6) House style information and details for both Groswater and Labrador Early Dorset is generally limited, but they are not distinctive enough between the groups to suggest

anything other than a shared Paleoeskimo ancestry.

7) Most anomalies noted appear to either be a result of a shared Paleoeskimo ancestry or have been shown not to be anomalous at all. Further, while some site locations may indicate a possible closer relationship between Groswater and Labrador Early Dorset, the complexities of these locations require a more detailed analysis than could be conducted here to determine the true nature of these sites.

8) St. John's Harbour 5 does not stand out as unique from the other Groswater sites examined.

9) Overall, Groswater and Labrador Early Dorset appear to be separate groups. There is no evidence in the artifacts, lithic preferences or dwelling forms to suggest interaction. However, site locations may provide information on the nature of a type of interaction to be discussed further in the following chapter.

CHAPTER 4

CONCLUSIONS

Based on the three scenarios presented in Chapter 2 and the results from Chapter 3, the scenario that appears best to fit Groswater and Labrador Early Dorset data is that of indirect or passive interaction. A synopsis of the evidence for indirect or passive interaction is presented in Table 4.1.

Table 4.1: Evidence for Indirect or Passive Interaction between Groswater and Labrador Early Dorset in Labrador

Line of Evidence	Observations
Dates	Some dates overlap and a student's t-test demonstrates that there is potential that these dates are contemporaneous.
Site Locations	Sites are in the same geographic area from the Saglek Bay region to the Nain region.
Lithic Materials Used	Throughout all of their sites, the Groswater and Labrador Early Dorset used consistent lithic material unique to each. Materials do not appear to change in the areas of overlap - Groswater continue to use both colourful cherts and Ramah, and Labrador Early Dorset continue to use Ramah chert almost exclusively.
Tools	Throughout all of their sites, the Groswater and Labrador Early Dorset used tools largely stylistically unique to each.
House Styles	A variety of house styles with some overlapping features that could be could be attributable to a common Palaeoeskimo ancestry.
Settlement and Subsistence patterns	While sites are in the same geographic regions, in some areas, such as Nain, there appears to be a clear separation in site location choice within the geographic region. Generally Groswater tend to be on the inner islands while Labrador Early Dorset are on the outer islands during the same time period.

The dates and site locations overlap suggesting that there was the possibility for face-to-face interaction. Contrary to previous statements in the literature that suggested that Groswater, while surviving on the central and south coasts, was replaced by the Dorset in the north (Cox 1978:106; Tuck and Fitzhugh 1986:164), the analysis of dates and site locations suggests that rather than replacement there was potential coexistence.

Despite this potential coexistence, there appears to have been little change in either the Groswater or Labrador Early Dorset material culture in this area, or in other areas where both groups are in close proximity such as the Dog Bight region near Nain or the Saglek Bay region in northern Labrador. Had there been a level of interaction that resulted in cultural changes in either group, one might expect to see these changes expressed in the material culture and visible archaeologically. It is noted that the Groswater sites found in the southern areas of Labrador, outside the Labrador Early Dorset range, are comparable to collections from geographic regions where both groups are present. Had Labrador Early Dorset influenced Groswater culture, differences in the material culture within the region where they co-exist should be different than the southern regions where there are no Labrador Early Dorset sites. Further, lithic material use within both cultures retains similar patterns throughout the Labrador sites, with Labrador Early Dorset using Ramah almost exclusively and Groswater predominantly utilizing a mix of fine-grained cherts and Ramah. As Groswater were already utilizing Ramah in their toolkits throughout Labrador, an increase in Ramah use in the northerly sites is more likely a result of proximity to the source rather than influence of Labrador Early Dorset. Had there been greater interaction, it may have shown itself in an increase

in fine-grained materials in Labrador Early Dorset in the overlapping Groswater regions.

Microblades, microblade cores, flakes and some bifaces were arguably quite similar between the groups, but as with the makeup of the tool kits themselves, the style of these types of tools are likely more correctly interpreted as being the result of a shared Palaeoeskimo ancestry than being a result of direct contact/influence among the groups. These tools are made the same way throughout both groups with little noticeable change in style to indicate a period of change when the groups may have overlapped.

There is a sizeable amount of unpublished information on Groswater and Labrador Early Dorset houses. The information added from SRF for both groups suggests some similarities in house forms, with some mid-passage features, middens and flat paving stones appearing in both groups. This is likely to be the result of shared Palaeoeskimo ancestry.

The more detailed examination of site locations suggested that while the groups occupied the same geographic region in general, both groups maintained cultural boundaries within these geographic regions. More particularly Groswater, while utilizing some of the more outer coastal areas, also utilized some inner island locations. Labrador Early Dorset meanwhile, maintained a strong pattern of outer coastal land use only.

This geographic distribution could suggest two possible explanations: 1) that what we are really seeing is site placement based on the seasonal rounds of what is actually the same group of people, or that 2) there is a conscious decision on the part of the each group to maintain a separation of space within the same region from the other. As it was demonstrated in Chapter 3 that we are looking at two separate groups based on tool

kit composition, stylistic differences and raw material use, then it is the second option that appears to be the scenario we are dealing with in the relationship of Groswater to Labrador Early Dorset.

There were a few anomalies in the collections that might be interpreted to interaction, but they tended to be seen in isolated finds of artifacts in the collections. In all cases where there was an isolated find in the other's group, the artifact maintained clear characteristics of the originating culture and could have just as easily been explained by scavenging of sites, rather than direct interaction. The sites in the Saglek region (Tuck 1975), may warrant further examination given that these sites were analyzed early in the understanding of Palaeoeskimo groups in Newfoundland and Labrador and changes in our understanding of these sites have been already referred to in the literature (Tuck and Fitzhugh 1986). As this was another of the regions singled out for showing site placement overlap, and as the artifacts illustrated in Tuck (1975) suggest a mixing of artifacts from each group throughout, the sites here may offer further insight into Groswater and Labrador Early Dorset relationships.

The St. John's Harbour 5 site itself appears to be firmly rooted in a Groswater tradition. As for influence from Labrador Early Dorset occurring at this site, the available evidence does not support this hypothesis. The materials used and the styles of the artifact are consistent with other Groswater sites, with few attributes that are usually attributable to Labrador Early Dorset. While nephrite use, which is more often associated with Labrador Early Dorset collections, is slightly higher at St. John's Harbour 5, most of the nephrite use was seen in ground flakes. The one finished artifact, a nephrite ground

knife, was shown to be similar to three other examples, all from Groswater sites, indicating that this is in fact a Groswater trait. Further, the general chert use at this site did not appear to be different from other Groswater sites in any other way.

The pattern of separate locations at potentially the same time fits into options for hunter-gatherer groups discussed in Chapter 2. If interaction occurred in the form of partitioning the land, then this would mimic the pattern suggested by Renouf (2003) for Recent Indians and Dorset populations in northeastern Newfoundland. That is, "...both culture groups were situating their sites with respect to each other. This does not mean avoidance or hostility but an accommodation to the other culture's camps and settlements - passively sharing the landscape at the same time as actively sharing resources and information" (Renouf 2003:10). As there does not appear to be any evidence of conflict noted in the collections through the presence of human remains indicating trauma, and since the groups do not show changes in their material culture because of interactions, then a sharing of land and passive interaction is the more likely conclusion to explain the spatial patterns observed.

The pattern observed for Groswater and Labrador Early Dorset may also be similar to ones observed in the Arctic, where there are small groups utilizing a vast area with little or no contact at all. For example McGhee suggested that for Dorset and Thule "A third scenerio, comprising sporadic and ephemeral contact over a period of generations, but resulting in no significant transfer of knowledge or technology between the two groups, would seem to be more consistent with the present archaeological evidence as well as with our reconstructions of the societies and cultures of the people

involved" (McGhee 1997:212).

It could be argued that even though potential contemporaneity in dates was demonstrated, the limited number of dates and the time range and the vastness of the geography may mean these groups were completely unaware of each other and no interaction ever took place. Further, under this scenario, the site placements observed for Groswater and Labrador Early Dorset are merely reflections of individual cultural preference in land use, and that there is consideration of other groups in the site location selection.

Bearing these potential conclusions in mind, it can still be demonstrated that even if Groswater and Labrador Early Dorset lived in the same geographic region, presumably availing of the same resources around the same period in time, they still utilized stylistically different toolkits, raw material use and site locations. All indications are that while they may have been aware of each other and modified some of their land use patterns accordingly, a separation of cultures was maintained between these two groups.

REFERENCES

Anthony, David
1990 Migration in archaeology. *American Anthropologist* 92:895-914.

Auger, Reginald
1986 Factory Cove: An Early Palaeo-Eskimo Component From the West Coast of Newfoundland. In *Palaeo-Eskimo Cultures in Newfoundland, Labrador and Ungava,* Reports in Archaeology No.1, pp 111-118, Memorial University of Newfoundland, St. John's, Newfoundland.

Bielawski, Ellen
1979 Contactual Transformations: The Dorset-Thule Succession. In *Thule Eskimo Culture: An Anthropological Retrospective*, edited by A.P. McCartney, pp 100-109. National Museum of Man, Mercury Series, Archaeological Survey of Canada, Paper 88, National Museums of Canada, Ottawa.

1988 Palaeoeskimo Variability: The Early Arctic Small Tool Tradition in the Central Canadian Arctic. *American Antiquity* 53(1):52-74.

Binford, Lewis R.
1980 Willow Smoke and Dogs' Tails: Hunter-Gatherer Settlement Systems and Archaeological Site Formation. *American Antiquity*, 45(1):4-20.

1983 *In Pursuit of the Past*. Thames and Hudson, London.

Bowman, Sheridan
1990 *Radiocarbon Dating.* University of California Press, Berkeley.

Broom, L., B.J. Siegel, E.Z. Vogt and J.B. Wilson
1954 Acculturation: An Explanatory Formulation. *American Anthropologist*, 56:973-995.

Cox, Steven
1977 Prehistoric Settlement and Culture Change at Okak, Labrador. Unpublished Ph.D. Dissertation, Department of Anthropology, Harvard University.

1978 Palaeo-Eskimo Occupations of the Northern Labrador Coast. *Arctic Anthropology* XV(2):96-118.

1988 Pre-Dorset Occupations of Okak Bay, Labrador. *The Northern Raven,* 8(3):1-3.

2002 Palaeoeskimo Structures in the Okak Region of Labrador. Paper presented at the Palaeoeskimo Architecture Conference, St. Pierre.

Cox, Stephen and Art Spiess
1980 Dorset Settlement and Subsistence in Northern Labrador. *Arctic* 33:659-669.

Dumond, Don E.
1987 *The Eskimos and Aleuts*. Thames and Hudson Limited, London.

Erwin, John
1995 An Intrasite Analysis of Phillip's Garden: A Middle Dorset Palaeo-Eskmio Site at Port au Choix, Newfoundland. Unpublished Masters Dissertation, Department of Anthropology, Memorial University of Newfoundland. St. Johns, Newfoundland.

Fitzhugh, William
1972 *Environmental Archeology and Cultural Systems in Hamilton Inlet, Labrador A Survey of the Central Labrador Coast From 3000 B.C. to the Present.* Smithsonian Contributions the Anthropology No.16, Smithsonian Institution Press, Washington.

1976 Preliminary Culture History of Nain, Labrador: Smithsonian Fieldwork, 1975. *Journal of Field Archaeology* 3:123-142.

1977 Archaeological Site Record forms and related information for Labrador sites. On file, Arctic Studies Centre, National Museum of Natural History, Smithsonian Institution, Washington, D.C..

1980a Archaeological Site Record forms and related information. On file, Arctic Studies Centre, National Museum of Natural History, Smithsonian Institution, Washington, D.C..

1980b Archaeological Site Record forms and related information, on file with the Provincial Archaeology Office of the Culture and Heritage Division, Department of Tourism, Culture and Recreation, Government of Newfoundland and Labrador, St. John's, Newfoundland.

1980c Preliminary Report on the Torngat Archaeological Project. *Arctic* 33(3):585-606.

1980d A Review of Paleo-Eskimo Culture History in Southern Quebec-Labrador and Newfoundland. *Études/Inuit/Studies* 4(1-2):21-31.

1981 Smithsonian Archaeological Surveys, Central and Northern Labrador, 1980. In *Archaeology in Newfoundland and Labrador 1980*, Annual Report No. 1. Edited by Jane Sproull Thomson and Bernard Ransom, pp 26-47. Historic Resources Division, Government of Newfoundland and Labrador, St. John's, Newfoundland.

1997 Biogeographical Archaeology in the Eastern North American Arctic. *Human Ecology* 25(3), pp. 385-418.

Friesen, Max T.
2000 The Role of Social Factors in Dorset - Thule Interaction. In *Identities and Culture Contacts in the Arctic*, Proceedings from a Conference at the Danish National Museum, Copenhagen, November 30 to December 2, 1999, edited by Martin Appelt, Joel Berglund and Hans Christian Gulløv, pp 206-220. Danish Polar Center Publications No.8, Dansk Polar Center, Copenhagen.

Gendron, Daniel, and Claude Pinard
2000 Early Palaeo-Eskmio Occupations in Nunavik: A Re-Appraisal. In *Identities and Culture Contacts in the Arctic*, Proceedings from a Conference at the Danish National Museum, Copenhagen, November 30 to December 2, 1999, edited by Martin Appelt, Joel Berglund and Hans Christian Gulløv, pp 129-142. Danish Polar Center Publications No.8, Dansk Polar Center, Copenhagen.

Green, Stanton W.
1991 Foragers and Farmers on the Prehistoric Irish Frontier. In *Between Bands and States*, Edited by Susan. A. Gregg, pp 216-244. Center for Archaeological Investigations Occasional Papers No. 9, Carbondale.

Grønnow, Bjarne
1996 Qeqertasussuk - the Archaeology of a Frozen Saqqaq Site in Disko Bugt, West Greenland. In *Threads of Arctic Prehistory: Papers in Honour of William E. Taylor, Jr.*, edited by David Morrison and Jean-Luc Pilon, pp 197-238, Archaeological Survey of Canada, Mercury Series, Paper 149, Canadian Museum of Civilization, Hull, Quebec.

Guyer, Erica Lisa
1997 Prehistoric Culture Contact: Dorset-Thule Interaction in Labrador and Baffin Island? Unpublished B.A. Honors Thesis, Department of Anthropology, Brown University.

Halstead, Paul and John O'Shea
1989 Introduction: Cultural Responses to Risk and Uncertainty. In *Bad Year Economics Cultural Responses to Risk and Uncertainty*, edited by Paul Halstead and John O'Shea, pp1-7. New Directions in Archaeology, Cambridge University Press, Cambridge.

Harp, Elmer Jr.
1976 Dorset Settlement Patterns in Newfoundland and Southeastern Hudson Bay. In *Eastern Arctic Prehistory: Paleoeskimo Problems*, edited by M.S. Maxwell, pp 119-138. Memoirs of the Society for American Archaeology, No. 31.

Hartery, Latonia and Tim Rast
2001 Bird Cove Archaeology Project 2000 Field Season: Final Report. Manuscript on file the Provincial Archaeology Office, Department of Tourism, Culture and Recreation, Provincial Government of Newfoundland and Labrador, St. John's, Newfoundland.

2002 Bird Cove Archaeology Project 2001 Field Season: Final Report. Manuscript on file the Provincial Archaeology Office, Department of Tourism, Culture and Recreation, Provincial Government of Newfoundland and Labrador, St. John's, Newfoundland.

Hood, Bryan
1986 Nukasusutok 12: Early/Middle Dorset Axial Structures from the Nain Region, Labrador. In *Palaeo-Eskimo Cultures in Newfoundland, Labrador and Ungava,* Reports in Archaeology No.1, pp 49-64, Memorial University of Newfoundland, St. John's, Newfoundland.

Kelly, Robert L.
1983 Hunter-Gatherer Mobility Strategies. *Journal of Anthropological Research* 39:277-306.

1992 Mobility/Sedentism: Concepts, Archaeological Measures and Effects. *Annual Review of Anthropology* 21:43-66.

Kennett, Douglas, J.
1996 General Systems Theory. In *The Oxford Companion to Archaeology*, edited by Brian M. Fagan, pp 245-246. Oxford University Press, Oxford.

LeBlanc, Raymond
1994 The Crane Site and the Lagoon Complex in the Western Canadian Arctic. In *Threads in Arctic Prehistory: Papers in Honour of William E. Taylor, Jr.*, edited by David Morrison and Jean-Luc Pilon, pp. 87-102. Mercury Series Paper 149, Archaeological Survey of Canada, Canadian Museum of Civilization, Hull, Quebec.

LeBlanc, Sylvie
1996 A Place with a View: Groswater Subsistence-Settlement Patterns in the Gulf of St. Lawrence. Unpublished Masters Thesis, Department of Anthropology, Memorial University of Newfoundland, St. John's, Newfoundland.

2000 "Middle Dorset (1900-1100 BP) Regional Variability on the Island of Newfoundland and in Saint-Pierre et Miquelon. In *Identities and Culture Contacts in the Arctic*, Proceedings from a Conference at the Danish National Museum, Copenhagen, November 30 to December 2, 1999, edited by Martin Appelt, Joel Berglund and Hans Christian Gulløv, pp 97-105. Danish Polar Center Publications No.8, Dansk Polar Center, Copenhagen.

Linton, Ralph
1963 Acculturation and Process of Culture Change. In *Acculturation in Seven American Tribes*, edited by Ralph Linton, pp 463-482. Appleton-Centruy, Glouster.

1963b The Process of Change Transfer. In *Acculturation in Seven American Tribes*, edited by Ralph Linton, pp 483-500. Appleton-Century, Glouster.

Loring, Stephen
1983 An Archaeological Survey of the Inner Bay Region Between Nain and Davis Inlet, Labrador: A Report of the 1982 Field Work. In *Archaeology in Newfoundland and Labrador 1982*, Annual Report No. 3. Edited by Jane Sproull Thomson and Callum Thomson, pp 32-56. Historic Resources Division, Government of Newfoundland and Labrador, St. John's, Newfoundland.

Loring, Stephen and Steven Cox
1986 The Postville Pentecostal Groswater Site, Kaipokok Bay, Labrador. In *Palaeo-Eskimo Cultures in Newfoundland, Labrador and Ungava.* Reports in Archaeology No. 1, pp 65-94, Memorial University of Newfoundland, St. John's, Newfoundland.

McManus, Gary and Clifford Wood
1991 *Atlas of Newfoundland and Labrador*. Breakwater, St. John's, Newfoundland.

Maxwell, Moreau S.
1985 *Prehistory of the Eastern Arctic.* Academic Press, Inc. Orlando.

McGhee, Robert
1976 Paleoeskimo Occupations of Central and High Arctic Canada. In *Eastern Arctic Prehistory: Paleoeskimo Problems,* edited by M.S. Maxwell, pp. 15-39. Memoirs of the Society for American Archaeology 31.

1979 *The Paleoeskimo Occupations at Port Refuge, High Arctic Canada.* Mercury Series Paper 92, Archaeological Survey of Canada, National Museums of Canada, Ottawa.

1990 *Canadian Arctic Prehistory*. Canadian Museum of Civilization, Ottawa.

1996 *Ancient People of the Arctic.* UBC Press, Vancouver.

1997 Meetings Between Dorset Culture Palaeo-Eskimos and Thule Culture Inuit: Evidence from Brooman Point. In *Fifty Years of Arctic Research*, edited by R. Gilberg and H.C. Gulløv, pp 209-214. Publications of the National Museum Ethnographical Series, Vol. 18, Department of Ethnography, The National Museum of Denmark, Copenhagen.

McGhee, Robert and James A. Tuck
1976 Un-dating the Canadian Arctic. In *Eastern Arctic Prehistory: Paleoeskimo Problems,* edited by M.S. Maxwell, pp. 6-14. Memoirs of the Society for American Archaeology 31.

Minc, Leah D. and Kevin P. Smith
1989 The Spirit of Survival: Cultural Responses to Resource Variablitiy in North Alaska. In *Bad Year Economics Cultural Responses to Risk and Uncertainty*, pp 8-39. Cambridge University Press, Cambridge.

Morlan, Richard E.
2002 The Canadian Archaeological Radiocarbon Database, Canadian Museum of Civilization, Hull, Quebec. http:www.canadianarchaeology.com/radiocarbon/card/card.html.

Murray, Maribeth
1996 Economic Change in the Palaeoeskimo Prehistory of the Foxe Basin, N.W.T.. Unpublished Ph.D. dissertation, Department of Anthropology, McMaster University, Hamilton, Ontario.

Nagy, Murielle
1994 A Critical Review of the Pre-Dorset/Dorset Transistion. In *Threads in Arctic Prehistory: Papers in Honour of William E. Taylor, Jr.*, edited by David Morrison and Jean-Luc Pilon, pp. 1-14. Mercury Series Paper 149, Archaeological Survey of Canada, Canadian Museum of Civilization, Hull, Quebec.

2000 From Pre-Dorset Foragers to Dorset Collectors: Palaeo-eskimo Cultural Change in Ivujivik, Eastern Canadian Arctic. In *Identities and Culture Contacts in the Arctic*, Proceedings from a Conference at the Danish National Museum, Copenhagen, November 30 to December 2, 1999, edited by Martin Appelt, Joel Berglund and Hans Christian Gulløv, pp 143-148. Danish Polar Center Publications No.8, Dansk Polar Center, Copenhagen.

Odess, Dan
1998 The Archaeology of Interaction: Views from Artifact Style and Material Exchange in Dorset Society. *American Antiquity* 63(3):417-435.

Park, Robert W.
2000 The Dorset-Thule Succession Revisited. In *Identities and Culture Contacts in the Arctic*, Proceedings from a Conference at the Danish National Museum, Copenhagen, November 30 to December 2, 1999, edited by Martin Appelt, Joel Berglund and Hans Christian Gulløv, pp 192-205. Danish Polar Center Publications No.8, Dansk Polar Center, Copenhagen.

Pastore, Ralph T.
1986 The Spatial Distribution of Late Palaeo-Eskimo Sites on the Island of Newfoundland. In *Palaeo-Eskimo Cultures in Newfoundland, Labrador and Ungava.* Reports in Archaeology No. 1, pp 125-134, Memorial University of Newfoundland, St. John's, Newfoundland.

Peterson, Robert
1997 On 'Smell of the Forest' in the Greenlandic Myths and Legends. In *Fifty Years of Arctic Research*, edited by R. Gilberg and H.C. Gulløv, pp 243-248. Publications of the National Museum Ethnographical Series, Vol. 18, Department of Ethnography, The National Museum of Denmark, Copenhagen.

Provincial Archaeology Office (PAO)
n.d. Archaeological Site Record forms, and related information, on file with the Provincial Archaeology Office of the Culture and Heritage Division, Department of Tourism, Culture and Recreation, Government of Newfoundland and Labrador, St. John's, Newfoundland.

Ramsden, Peter and James A. Tuck
2001 A Comment on the Pre-Dorset/Dorset Transition in the Eastern Arctic. *Anthropological Papers of the University of Alaska*, NS 1(1):7-11.

Rankin, Lisa
1998 Historical Context and the Forager/Farmer Frontier: Re-Interpreting the Nodwell Site. Unpublished PhD Thesis, McMaster, Hamilton, Ontario.

Renouf, M.A.P.
1993 Palaeoeskimo Seal Hunters at Port au Choix, Northwestern Newfoundland. *Newfoundland Studies* 9(2):185-212.

1994 Two Transitional Sites at Port au Choix, Northwestern Newfoundland. In *Threads in Arctic Prehistory: Papers in Honour of William E. Taylor, Jr.*, edited by David Morrison and Jean-Luc Pilon, pp. 165-196. Mercury Series Paper 149, Archaeological Survey of Canada, Canadian Museum of Civilization, Hull, Quebec.

2003 Hunter-gatherer Interactions: Mutualism and Resource Partitioning on the Island of Newfoundland. *Before Farming* 2003/1(4): 1-16.

Renouf, M.A.P., Trevor Bell and Michael Teal
2000 Making Contact: Recent Indians and Palaeo-Eskimos on the Island of Newfoundland. In *Identities and Culture Contacts in the Arctic*, Proceedings from a Conference at the Danish National Museum, Copenhagen, November 30 to December 2, 1999, edited by Martin Appelt, Joel Berglund and Hans Christian Gulløv, pp 106-119. Danish Polar Center Publications No.8, Dansk Polar Center, Copenhagen.

Rouse, Irving
1986 *Migrations in Prehistory. Inferring Population Movement from Cultural Remains*. Yale University Press, New Haven, CT.

Schledermann, Peter
1996 *Voices in Stone A Personal Journey into the Arctic Past.* Komatik Series, Number 5, The Arctic Institute of North America, University of Calgary, Alberta.

Schortman, Edward M. and Patricia A. Urban
1987 Modeling Interregional Interaction in Prehistory. In *Advances in Archaeological Method and Theory*, Vol. 11, edited by Michael B. Schiffer, pp. 37-95.

Shennan, Stephen
1996 Cultural Transmission and Cultural Change. In *Contemporary Archaeology in Theory, A Reader*, edited by Robert W. Preucen and Ian Hodder, pp. 282-296. Blackwell Publishers, Oxford.

Spielmann, Katherine A.
1991 Interaction Among Nonhierarchical Societies. In *Farmers, Hunters, and Colonists Interaction Between the Southwest and the Southern Plains*, edited by Katherine A. Spielmann, pp. 1-17. The University of Arizona Press, Arizona.

1991b Coercion or Cooperation? Plains-Pueblo Interaction in the Protohistoric Period. In *Farmers, Hunters, and Colonists Interaction Between the Southwest and the Southern Plains*, edited by Katherine A. Spielmann, pp. 36-50. The University of Arizona Press, Arizona.

Stuiver, M. and P.J. Reimer
1993 Extended 14C Database and Revides CALIB Radiocarbon Calibration Program. *Radiocarbon* 35:215-230.

Stuiver, M, P.J. Reimer, E. Bard, J.W. Beck, G.S. Burr, K.A. Hughen, B. Kromer, F.G. McCormac, J. Plicht, and M. Spurk

1998 INTCAL98 Radiocarbon Age Calibration, 24,000-0 cal BP. In *Radiocarbon* 40:1041-1083.

Sutherland, Patricia
2000 Strands of Culture Contact: Dorset-Norse Interactions in the Canadian Eastern Arctic. In *Identities and Culture Contacts in the Arctic*, Proceedings from a Conference at the Danish National Museum, Copenhagen, November 30 to December 2, 1999, edited by Martin Appelt, Joel Berglund and Hans Christian Gulløv, pp 159-169. Danish Polar Center Publications No.8, Dansk Polar Center, Copenhagen.

Tuck, James, A.
1975 *Prehistory of Saglek Bay, Labrador: Archaic and Palaeo-Eskimo Occupations.* Mercury Series Paper 52, Archaeological Survey of Canada, National Museums of Canada, Ottawa.

1976 *Ancient People of Port au Choix. The Excavation of an Archaic Indian Cemetery in Newfoundland.* Newfoundland Social and Economic Studies No. 17, Institute of Social and Economic Research, St. John's, Newfoundland.

1988 *Prehistory of Atlantic Canada.* Unpublished manuscript on file, Department of Anthropology, Memorial University of Newfoundland, St. John's, Newfoundland.

Tuck, James, A. and William Fitzhugh
1986 Palaeo-Eskimo Traditions of Newfoundland-Labrador: Re-Appraisal. In *Palaeo-Eskimo Cultures in Newfoundland, Labrador and Ungava.* Reports in Archaeology No. 1, pp 161-167, Memorial University of Newfoundland, St. John's, Newfoundland.

Wobst, H. Martin
1978 The Archaeo-ethnology of Hunter-Gatherers or the Tyranny of the Ethnographic Record in Archaeology. *American Antiquity* 43(2):303-309.

Wright, J.V.
1995 *A History of the Native People of Canada, Volume I (10,000-1,000 B.C.).* Mercury Series Paper 152, Archaeological Survey of Canada, Canadian Museum of Civilization, Hull, Quebec.

APPENDIX 1

ST. JOHN'S HARBOUR 5, HECI-30
SITE REPORT

A1.1 Introduction

As the excavation of St. John's Harbour 5 (HeCi-30) was never fully reported, the following not only provides information on the site as it pertains to the questions asked in this thesis, but also serves as a site report for the original investigation. Found in 1977 by archaeologists from the Smithsonian Institution, St. John's Harbour 5 was excavated in 1980 by Susan Kaplan, Bryan Hood, Morton Melgaard and Eric Loring, under the direction of William Fitzhugh (Fitzhugh 1980).

A1.2 Site Location

The site is located on the north-central Labrador coast, just north of Nain on the eastern side of South Aulatsivik Island. South Aulatsivik is sheltered by a number of smaller islands on its eastern side (see Chapter 3, Figure 3.2) and the site is at the eastern end of a high beach pass which runs east-west between two high rocky hills from the southeast corner of St. John's Harbour at an elevation of about 7 masl (Fitzhugh 1977, 1980).

A1.3 Site Description

St. John's Harbour 5 was estimated to be between 20 to 30 m^2 in size (Fitzhugh 1977). Excavation of the site began with a 1 x 8 m trench, and continued with the opening of 18 more 1 x 1 m units for a total of 26 one metre square units[1]. While drawings of unit profiles

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[1] Surface collections were also made at the site when it was discovered in 1977, at the time of excavation in 1980, and during a subsequent site revisit in 1984.

are not present in the field notes[2], written notes indicate that the stratigraphy was not deep, and that soil profiles consisted of 5-7 cm of vegetation and humus on top of sand and gravel. Artifacts were located primarily in the upper root zone, concentrated in the humified peat with some found in the sand and gravel. The site was interpreted as containing a structure entirely *insitu* because of the vegetation cover that had only some erosion along the edges (Fitzhugh 1977, 1980).

The site map (Figure A1.1) indicates an axial feature identified by two double lines of paving stones with cleared areas around them. The exterior limits of the axial feature are not well defined. Midden areas are located at the end of both double lines of paving stones (Units 14 and 26). A hearth region that exhibited wood charcoal, fire-cracked rock, grindstone slabs and chert material is also located through the central area of the site. At the northwest end of the site a hearth pit with charcoal staining is built into the bedrock edge and dug into the gravel approximately 15 to 20 cm below the surface (Unit 1).

Fire-cracked rock was found in concentrations throughout the site, particularly on top of the middens. Blubber-stained rocks were noted primarily in the central region of the site and were interpreted by the archaeologists to be lamp areas (Fitzhugh 1980). Charcoal was also noted as being scattered throughout many of the units, and an ashy soil deposit was noted in Unit 18. Finally in Unit 3 "two speckles of red ochre" were noted (Fitzhugh 1980).

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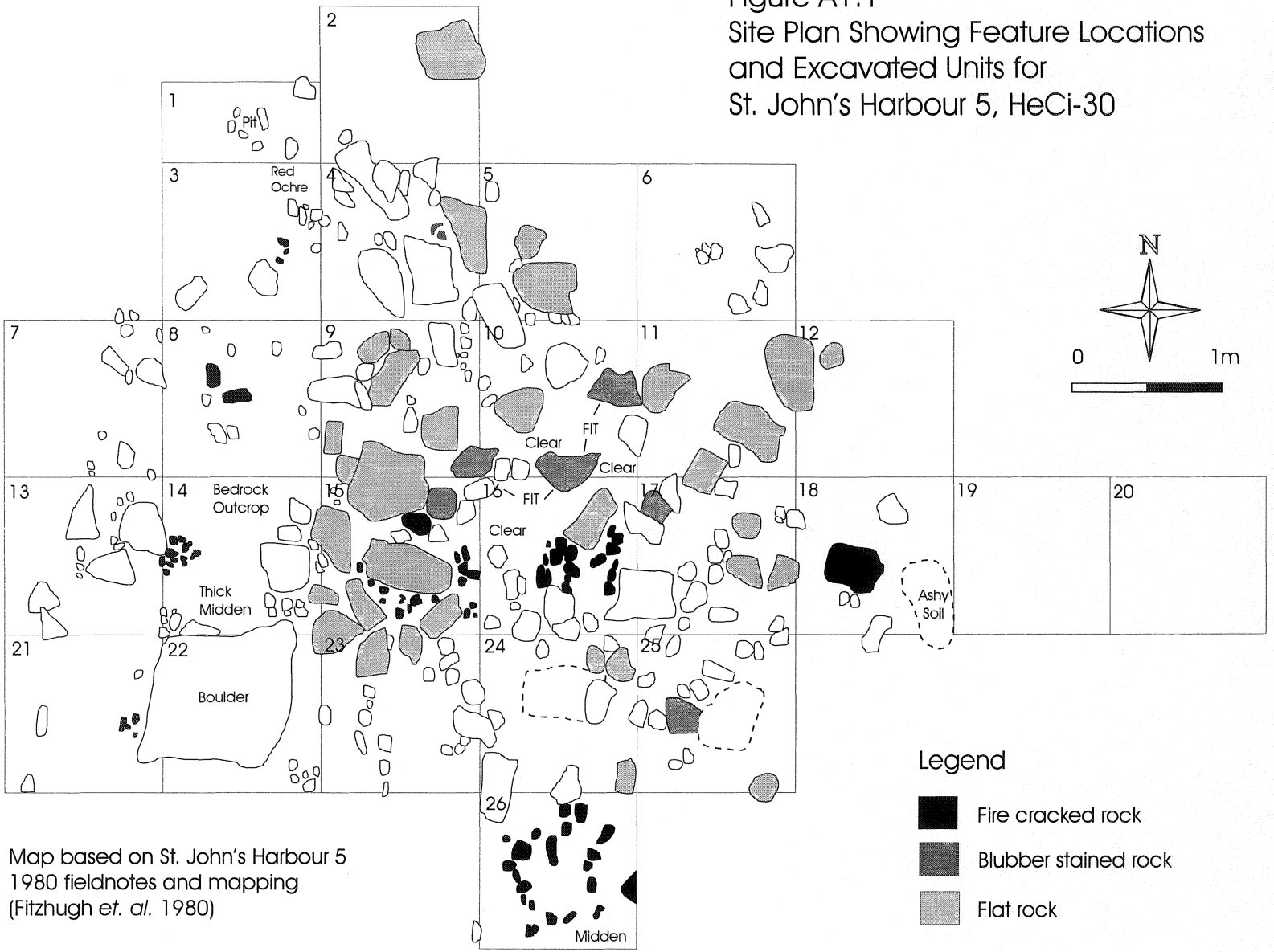
[2]Fieldnotes are available for this site; however there are no notes made on Units 13 and 14 except for a map of the units, and there are no notes or maps for Units 15 and 16. Kaplan (personal communication, 1999) noted these were lost during the field season.

Figure A1.1
Site Plan Showing Feature Locations
and Excavated Units for
St. John's Harbour 5, HeCi-30



Map based on St. John's Harbour 5
1980 fieldnotes and mapping
(Fitzhugh *et. al.* 1980)

A1.4 Dates

There are two dates obtained from the radiocarbon analysis of the charcoal recovered from the site. The first date is from a sample of charcoal collected from the hearth inside the house and provided a result of 2190 +/- 70 B.P. (SI-4824) (Calibrated to 1 sigma 2327 (2296, 2270, 2176, 2172, 2153) 2075 B.P.) (Stuiver and Reimer 1980)). The second sample was taken from the hearth pit in Unit 1, and produced a date of 2540 +/- 75 B.P. (SI-4825) (Calibrated to 1 sigma 2750 (2728) 2474 B.P.) (Stuiver and Reimer 1980)).

A1.5 Artifact Descriptions

The St. John's Harbour 5 collection consists of 476 stone tools and worked pieces, 27 pieces of fire-cracked rock, 1514 flakes and 134 pieces of shatter for a total of 2027 artifacts[3]. In describing the artifacts by tool category, percentages are based on the collection size of 476 artifacts.

A1.5.1 Endblades: n = 24 (5% of total artifact assemblage)

There are 24 artifacts identified as endblades (Figure A1.2) in the St. John's Harbour 5 collection. Seven endblades are complete (Figure A1.2 a-g) , four are distal portions (Figure A1.2 l, t-v), three are midsection portions (Figure A1.2 o, p, q) and ten are proximal portions (Figure A1.2 i-n, r, s, w, x), two of which are virtually complete minus the very tip of the

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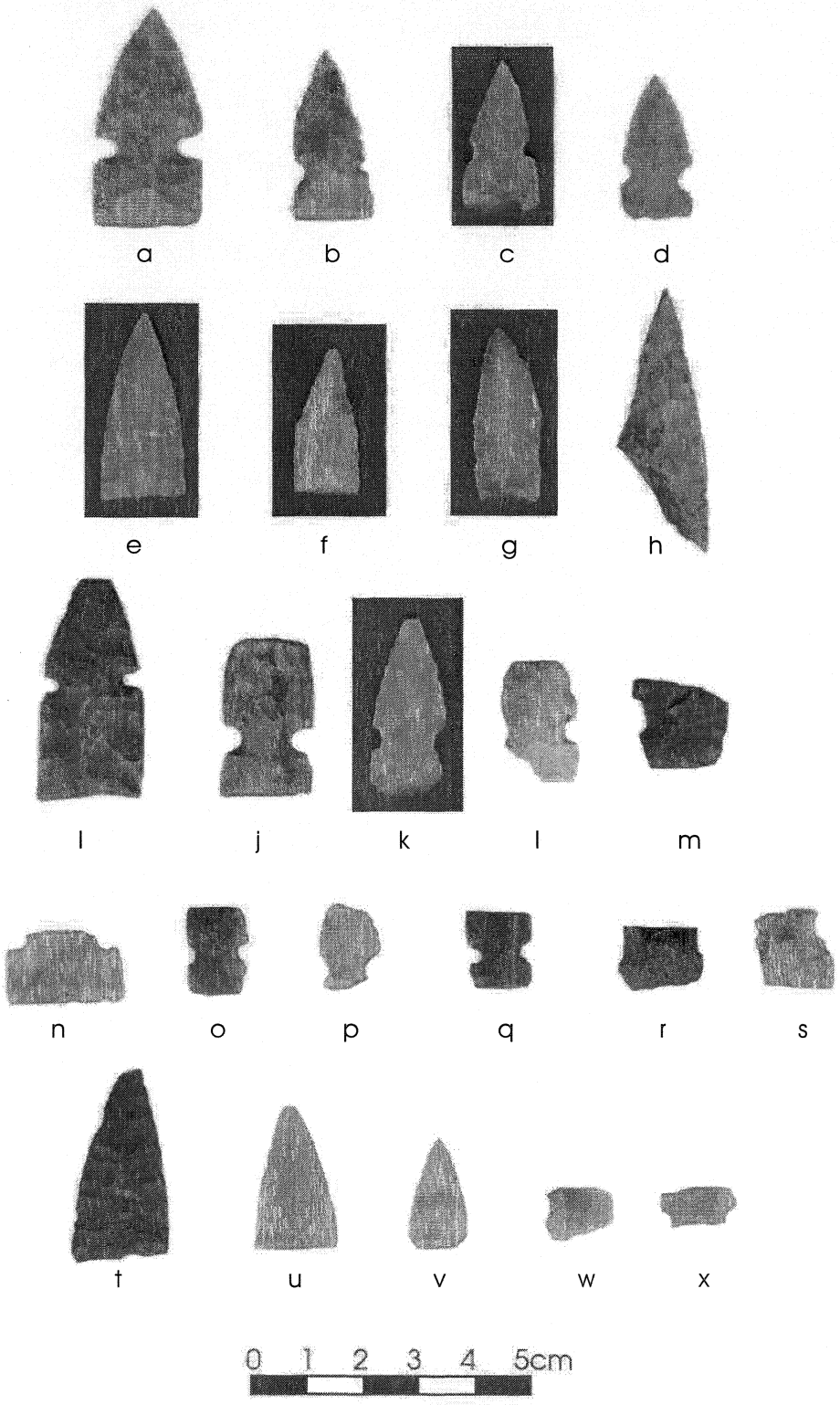
[3] While 515 artifacts were identified in the Smithsonian catalogue, at the time of analysis 11 artifacts were unaccounted for. Since the attributes listed for these artifacts could not be verified they were not included in the artifact descriptions here (see appendix 2 for the list of missing artifacts). Two artifacts that are listed separately fit together to create one artifact, thus, are treated as one. In addition, even though the twenty seven fire-cracked rock pieces were collected and catalogued, it was decided to not include them in the artifact analysis. Thus, these all brought the collection size to 476.

Figure A1.2
Endblades from St. John's Harbour 5, HeCi-30



endblade (Figure A1.2 i, k). Of the 24 pieces identified, 12 are made from Ramah chert, three from black chert, five from grey chert and four from tan chert. The endblades can generally be described as small, with most widths ranging between 10 mm and 20 mm. The lengths of the complete endblades range from 26 mm to 40 mm. Most endblades are about twice as long as they are wide, with an average of about 30.6 mm long to 14.2 mm wide (Table A1.1). The endblades are triangular in shape, and none of the distal ends shows evidence of tip-fluting. All endblades appear to be finely made, with generally parallel flaking scars on a slightly downturned angle from the distal end across the ventral surface. At least 15 of the endblades are clearly manufactured from a flake, with the remaining nine showing bifacial working such that it obscures whether the artifact was initially started from a flake or produced through bifacial reduction. Surface grinding is present on two of the endblades (HeCi-30:121 and HeCi-30:84) and 17 have notches near the base or lower midsection that generally are symmetrical and in single sets.

The seven complete endblades can be described as belonging to one of two types. The first type is represented by three endblades (Figure A1.2 e-g) that are triangular in shape, having generally straight bases that are thinned from the base working towards the distal end, and have no side-notches. Two of these (Figure A1.2 f and g) are clearly made on a flake and the third (Figure A1.2 e) is bifacially worked, but with a plano-convex profile which also suggests the artifact was made from a flake.

The second type of endblade is represented by four examples (Figure A1.2 a-d) that have straight bases and have a single set of parallel side-notches placed at varying distances above the base. Three of these (Figure A1.2 a-c) have notching higher up on the body of the

Table A1.1: Summary of St. John's Harbour 5 Complete Endblades

Cat. #	Length mm	Width mm	Thickness mm	Length to Width ratio	Base Description	Notching Description	Cross-section	Material
92	26	12	3	2.17:1	straight based, thinned on dorsal surface	no notching	plano-convex	Ramah
110	31	12	3	2.58:1	straight based, thinned on dorsal surface	no notching	plano-convex	Ramah
124	27.5	14	4	1.96:1	straight based	side-notched (box-based)	plano-convex	Ramah
138	40	19.5	4	2.05:1	straight based, thinned on dorsal surface	side-notched (box-based)	plano-convex	grey chert
166	30.5	15	4	2.03:1	straight based, thinned on dorsal surface	side-notched (box-based)	plano-convex	grey chert
207	26	12	3	2.17:1	straight based	side-notched	plano-convex	grey chert
326	33	15	4	2.20:1	straight based, bifacially thinned	no notching	plano-convex	Ramah
AVG	30.6	14.2	3.6	2.17:1				
Range	26-40	12-19.5	3-4	1.96:1 - 2.58:1				

endblade and produce a shape below the notches that has been described as box-based. HeCi-30:138 (Figure A1.2) is the most exaggerated in a box-based appearance with the other two having less defined notches. The fourth notched point, HeCi-30:207, does not produce the parallel side rectangular base (see discussion on notching descriptions below). These four endblades also appear to have been made on flakes, with the majority of working on the dorsal surfaces and little on the ventral surfaces, creating plano-convex profiles.

The four distal portions of endblades add little information for descriptive purposes as the most diagnostic features, base style and notching, are missing. All four of these specimens are plano-convex, with thicknesses ranging from 3 to 6 mm. One of the fragments, HeCi-30:206, (Figure A1.2 h) was regarded by Fitzhugh as an anomaly in its acute shape and sharp distal end (William Fitzhugh, personal communication 1998), but without its base little more can be said.

The remaining endblade specimens are midsections and bases that show evidence of side-notching. Seven of these are box-based in shape. Artifact HeCi-30:121 (Figure A1.2 i) has an unusually high placement of the side-notches and also shows evidence of grinding on the rectangular base portion of the proximal side.

All of the bases are straight to slightly concave and most are plano-convex in shape and appear to have been manufactured from flakes. Two of the midsection pieces (HeCi-30:58 and HeCi-30:63) appear to be manufactured from microblades, as is evidenced on each piece by the arris present on the dorsal surface, no working on the ventral surface, and the width of the pieces which is in keeping with the microblades found in the collection.

All endblades that exhibit notching were measured to determine the notch placement relative to the base (from the bottom of the base to the bottom of the notch), notch height (from the bottom inside of the notch to the top inside of the notch), and the notch depth (from the furthest outside point to the furthest inside point in the notch). Where possible, measurements were taken for notches on both sides recorded as left and right (with the ventral surface down). The type of notching, when possible to describe, was also noted (see Table A1.2)

A1.5.2 Knives: n = 5 (1% of total artifact assemblage)

The St. John's Harbour 5 collection contains five knives, each of which exhibits different characteristics.

HeCi-30:141 (Figure A1.3 a) is made of grey chert that has been bifacially worked to create a biconvex profile and slightly asymmetrical sides with one straight edge and one slightly convex edge. The base is missing just below the parallel wide notches, which does not allow for the full length to be determined, but with what is present the artifact is > 61 mm.

HeCi-30:385 (Figure A1.3 b) is a virtually complete knife (a small portion of the tip is missing), bifacially worked on tan chert. Triangular in shape and plano-convex in profile, it is symmetrically side-notched at the base, creating slight tangs.

HeCi-30:155 (Figure A1.3 c) is a complete bifacially ground nephrite knife with slight bifacially ground beveled edges, with some cortex still visible at the distal end. The piece is asymmetrical, being convex on one lateral edge and straight on the other, and is relatively flat on both surfaces. The base is notched producing shallow indents rather than deep side-notches.

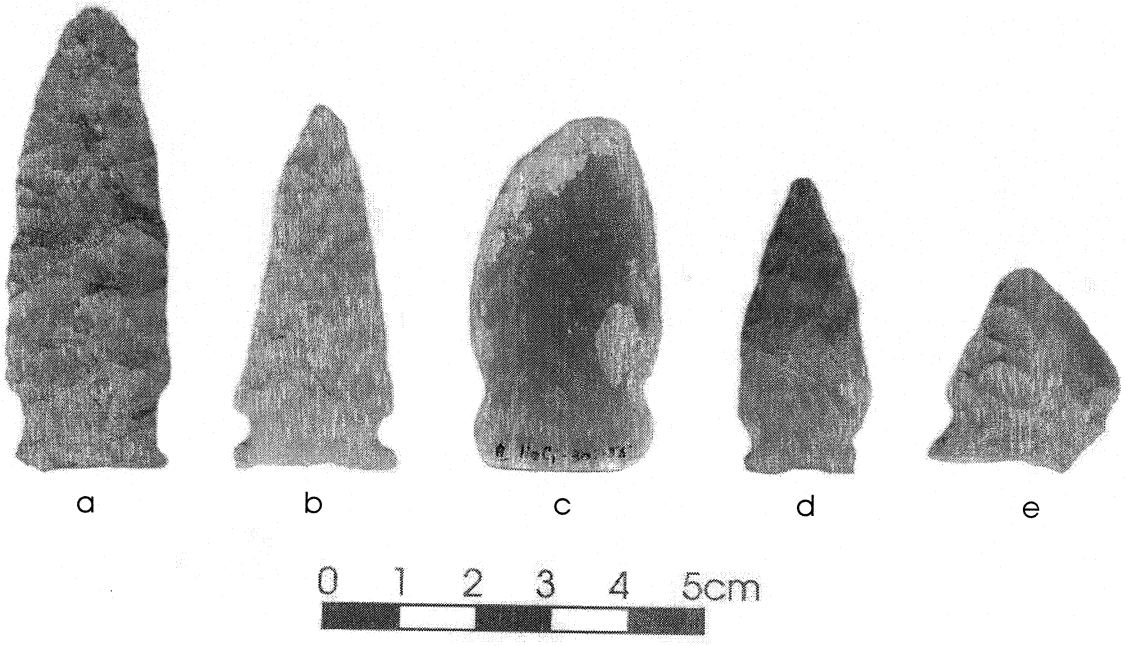
Table A1.2: Summary of notching on Endblades/Points from St. John's Harbour 5

Cat #	base width mm	height to notch from base mm L	height to notch from base mm R	notch height mm L	notch height mm R	notch depth mm L	notch depth mm R	hafting width mm	notching description	material
53	-	-	7.5	-	4.5	-	2.5	10	side-notched (box-based)	tan chert
58	-	-	-	5	-	2	3	7	side-notched	Ramah
63	-	-	-	3	4	2	2	7.5	side-notched (box-based)	grey chert
84	-	8	-	6	-	2.5	-	-	side-notched (box-based)	tan chert
121	19	20	20	3	3	3	3.5	11.5	side-notched (box-based)	grey chert
124	14	8	10	5.5	3	2	2.5	8.5	side-notched (box-based)	Ramah
138	19.5	13	12	4	4	4	4.5	10.5	side-notched (box-based)	grey chert
162	-	6	-	7	-	2.5	-	-	side-notched	black chert
166	15	8	8	3.5	2.5	2	2	9.5	side-notched	grey chert
201	12	7	7.5	3	3	2	2	7.5	side-notched (box-based)	Ramah
207	-	6.5	5	4	5	2.5	3	7.5	side-notched	grey chert
240	-	9.5	8.5	4	5	2	2	9	side-notched	Ramah
351	17	8	7	4.5	5	3	4	8.5	side-notched (box-based)	tan chert
413	21.5	10	10	-	-	-	-	-	side-notched (box-based)	Ramah
414*	-	-	-	-	-	-	-	-	side-notched (possibly box-based)	Ramah
439	13	5	5	-	-	-	-	13	side-notched	black chert
509	-	4	4	-	-	-	-	-	side-notched	Ramah
n	8	13	12	12	10	12	11	12		
avg	16.5	8.5	8.0	4.5	4.0	2.5	3.0	9.0		
range	12-21.5	4-20	4-20	3-7	2.5-5	2-4	2-4.5	7-13		
L & R avg	n/a	8.5 (n=24)		4.0 (n=22)		2.5 (n=23)				

- indicates measurement could not be made (either not present or incomplete)

* 414 is a midsection that was too incomplete for measurements and all that can be noted is that notching is present.

Figure A1.3
Knives from St. John's Harbour 5, HeCi-30



HeCi-30:165 (Figure A1.3 d) is produced from a flake which creates a strong curve in the longitudinal cross-section of the artifact. It is bifacially worked grey chert with parallel side-notches at the base with an overall triangular shape and plano-convex profile.

HeCi-30:415 (Figure A1.3 e) is a tan chert biface that broke and then was reworked into a knife-like or celt-like tool by bifacially grinding the distal end of the remaining biface to create a bifacially ground beveled edge on an angle. The notching that is present on one side of the artifact (the other is missing) appears to be a product of the original function as the flaking pattern is consistent with the non-reworked area around the notch. (See Table A1.3 for summary of all knives)

A1.5.3 Bifaces: n = 41 (9% of total artifact assemblage)

The biface category has 41 artifacts which includes bifacially worked artifacts that could not be clearly identified as an endblade, knife or other tool category (See Figure A1.4 for a selection). Of these artifacts, 19 are made from Ramah, 11 from black chert, eight from grey chert, two from tan chert, and one from quartz crystal.

There are ten proximal portions of bifaces, including seven that are generally nondescript, except to note that notching is present on four of them (see Table A1.4 for a summary of notching on bifaces), and that one, HeCi-30:169, is the only biface made from quartz crystal (Figure A1.4 a). Artifact HeCi-30:375 (Figure A1.4 b) exhibits a slightly concave base with basal thinning flakes removed and is reminiscent of the endblades, but has less definition to comfortably put it in the endblade category. The remaining two proximal portions, HeCi-30:78 (Figure A1.4 c) and HeCi-30:345 (Figure A1.4 d) are stemmed, and the latter artifact was described in the fieldnotes as possibly being a Pre-Dorset artifact based on

Table A1.3:Summary of St. John's Harbour 5 Knives

Cat #	Length mm	Width mm	Thickness mm	Length to Width ratio	Base width mm	height to notch from base mm L	height to notch from base mm R	notch height mm L	notch height mm R	notch width mm L	notch width R	hafting width mm	Base Description	Notching Description	Cross-section	Material
141	-	21	6	-	-	-	-	11	11	3	2	16.5	broken	side-notched (wide)	biconvex	grey chert
155	46.5	25	2.5	1.86:1	24	7	7	7	8	2	2	20.5	straight	side-notched (wide)	plano-plano	nephrite
165	39	18	4	2.16:1	15.5	2	2.5	5	4.5	1.5	1	13	slightly concave	side-notched	plano-convex	grey chert
385	48	21.5	4.5	2.23:1	22	3	2	4	5	2	2.5	17	slightly concave	side-notched	plano-convex	tan chert
415	-	21	3	-	-	-	-	6	-	2	-	-	broken	-	plano-convex	tan chert
n	3	5	5	3	3	3	3	5	4	5	4	4				
avg	44.5	21	4	2.08:1	20.5	4	4	6.5	7	2	2	16.5				

Figure A1.4
A Selection of Bifaces from St. John's Harbour 5, HeCi-30

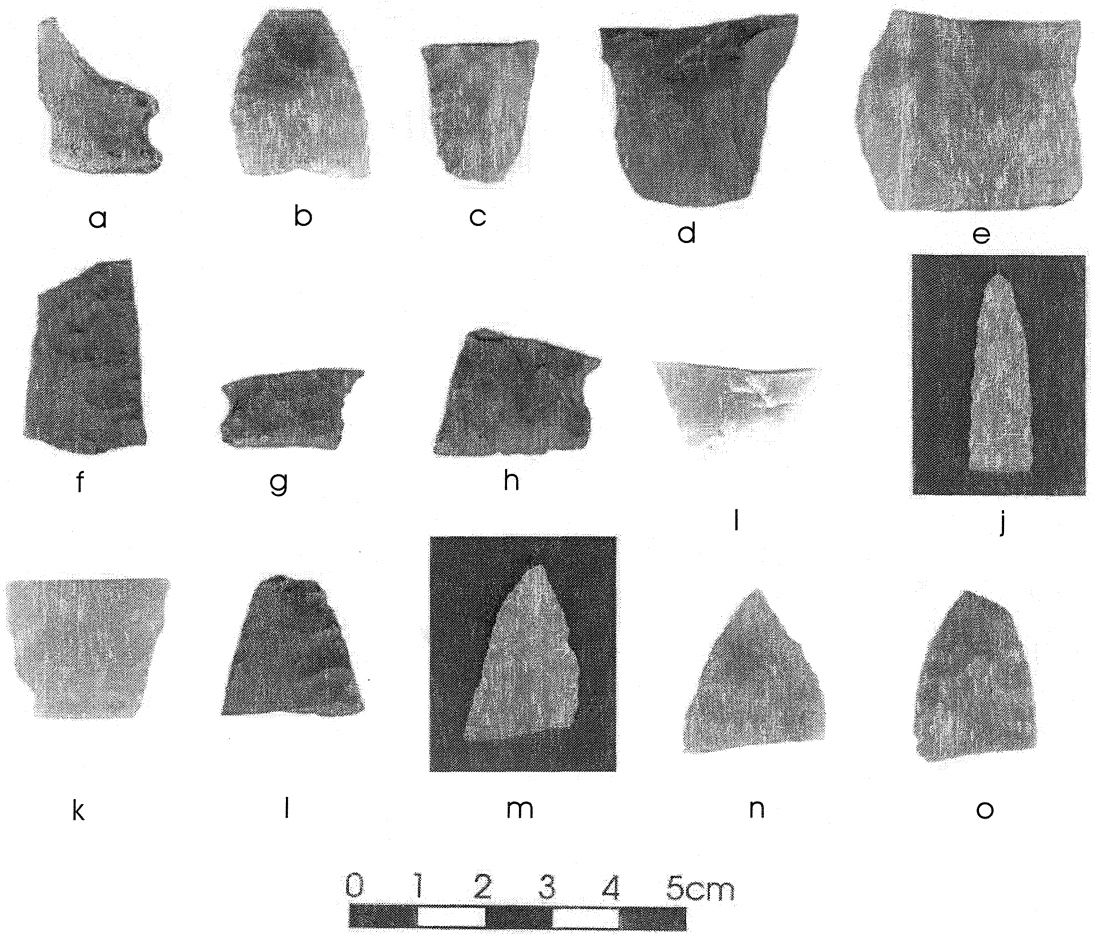


Table A1.4: Summary of St. John's Harbour 5 Biface Notching

Cat. #	base width mm	height from base mm L	height from base mm R	notch height mm L	notch height mm R	notch width mm L	notch width mm R	hafting width mm	Cross-section	Material
65*	-	-	-	-	-	-	-	-	biconvex	Ramah
169	10.5	3	2	6	8	2	1.5	14	plano-convex	quartz crystal
250	-	4	-	7	-	3	-	-	plano-convex	black chert
486	-	-	-	5	-	3	-	-	plano-convex	Ramah
496	19	5	4	8	5	3	2	17	biconvex	black chert
n	2	3	2	4	2	4	2	2		
avg	15	4	3	6.5	6.5	3	2	15.5		

* 65 is too incomplete for measurements and all that can be noted is that notching is present

Table A1.5: Summary of St. John's Harbour 5 Stemmed Bifaces

Cat #	Base width mm	shoulderwidth mm	stem length mm
78	24	29	18
345	15	18.5	20
n	2	2	2
avg	19.5	24	19

the shape of the stem (Fitzhugh 1980) (see Table A1.5 for a summary of stemmed bifaces).

The remaining bifaces consist of nine distal portions, nine midsection fragments, nine edge fragments and three fragments with no discernable shape. HeCi-30:463 (Figure A1.4 e) is an asymmetric biface midsection that if complete would likely be an asymmetric knife similar in shape to Groswater knives and the ground nephrite knife referred to earlier. HeCi-30:346 (Figure A1.4 f) is the second artifact that was noted in the fieldnotes as being a possible Pre-Dorset artifact, based on the overall shape of the midsection (Fitzhugh 1980) and HeCi-30:486 (Figure A1.4 h) is the only biface with evidence of notching. Biface fragment HeCi-30:51 (Figure A1.4 i) is made from Ramah that appears to have been burnt given the milky white colour of the artifact.

One artifact, HeCi-30:497 (Figure A1.4 j), is made of Ramah and is very thin and narrow along the midsection up to the distal end. While the base is not present the width of ten mm and thickness of three mm is consistent along most of the 30 mm of body present. In appearance it more closely resembles a drill tip, but not enough of the artifact is present to place it comfortably in a separate tool category.

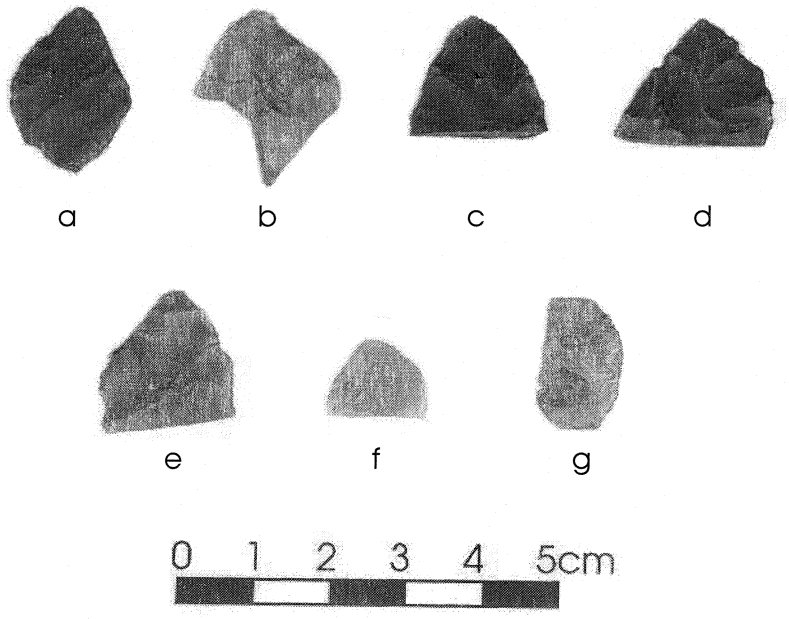
A1.5.4 Biface Preforms: n = 10 (2% of total artifact assemblage)

There are ten biface preforms in the collection with two made of nephrite, three of Ramah, one of grey chert and four of tan chert.

A1.5.5 Sideblades: n = 7 (1% of total artifact assemblage)

The seven sideblades identified in the St. John's Harbour 5 collection include one made of Ramah, three of black chert, two of grey chert and one of tan chert (Figure A1.5). The widest piece of these is two cm. All of the sideblades are bifacially worked, but some

Figure A1.5
Sideblades from St. John's Harbour 5, HeCi-30



show more working on one side. No grinding is noted on the surfaces. All are diamond/ovate shaped, except HeCi-30:172 (Figure A1.5 g) which is more oval/rectangular and may be a preform.

A1.5.6 Scrapers: n = 25 (5% of total artifact assemblage)

The 25 endscrapers identified in the collection include three made of Ramah, five of tan chert, ten of grey chert and six of black chert (Figure A1.6). Most of the scrapers are clearly made from flakes and are unifacially worked on the dorsal surface. Compared with other tool categories, scrapers tend to have less breakage. The scrapers can be divided into five categories based on their overall shape. The first category, with three scrapers, includes those that are eared on the distal end and have parallel sides and an elongated stem (Figure A1.6 a-c). A scraper was described as eared when there was a shoulder that formed small tangs before flaring out on the distal/scraping end. The second category, with five scrapers, consists of eared scrapers with parallel sides and a rectangular base (Figure A1.6 d-h). The third category, with five scrapers, are eared with contracting sides creating a triangular shaped base (Figure A1.6 i-m). The fourth category, with seven scrapers, are ones that have no clear eared distal end and are triangular in shape (Figure A1.6 n-t). The final category includes scrapers that do not fit into the other four categories and include a scraper made on a broken end of a microblade (Figure A1.6 u), two that appear to have been made using a broken biface, with one edge made into a working/scraping edge (Figure A1.6 v and w), and two that are rounded in shape (Figure A1.6 x and y) with the later being bifacially worked over most of the surfaces unlike the majority of the rest of the scrapers (see Table A1.6 for a summary of scrapers).

Figure A1.6
Scrapers from St. John's Harbour 5, HeCi-30

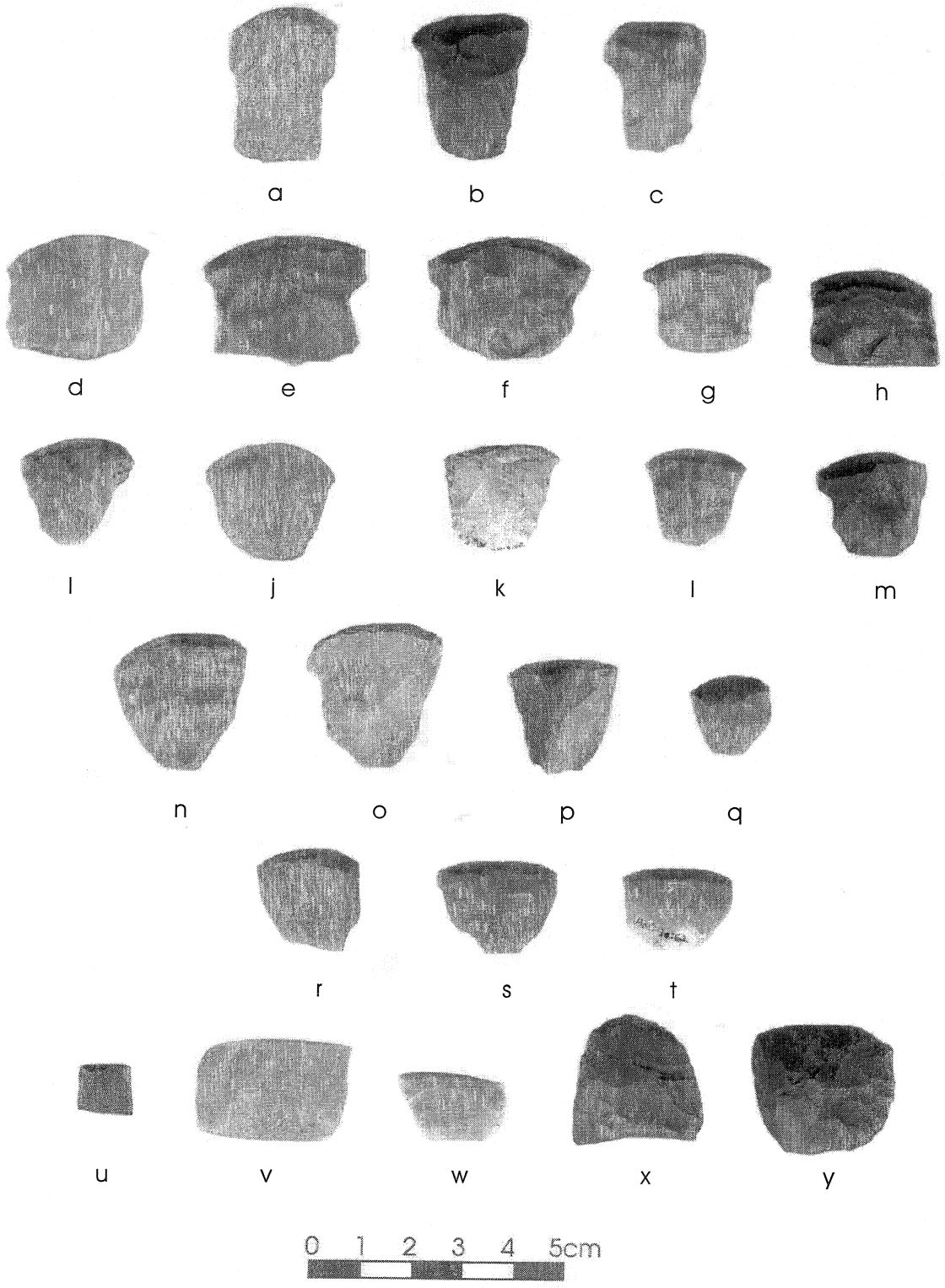


Table A1.6: Summary of Scrapers

Cat #	Scraper type	Scraper edge width mm	base width mm	shoulder width mm	stem length mm L	stem length mm R	scraping edge angle	material
281	stemmed	22.5	18	18	28	27.5	50◦	tan chert
253	stemmed	23.5	14	19	25	21	50◦	black chert
318	stemmed	21	14	15	18	19	70◦	grey chert
154	square eared	29	27	27	18.5	21.5	60◦	Ramah
164	square eared	33	29	26.5	16.5	18	60◦	grey chert
170	square eared	32	26	27	14	16	70◦	grey chert
313	square eared	26.5	26.5	24.5	17.5	15	50◦	black chert
280	square eared	25	18	18.5	15	15	60◦	grey chert
436	triangular eared	22	14	18	14	13	60◦	black chert
56	triangular eared	23.5	15	21	17	17.5	75◦	tan chert
377	triangular eared	26	15	23	17	16	70◦	Ramah
102	triangular eared	22	9.5	17	13	13.5	70◦	grey chert
314	triangular eared	20	12	15	13	15	60◦	grey chert
80	triangular	20.5	-	-	-	-	60◦	grey chert
249	triangular	24.5	-	-	-	-	60◦	grey chert
127	triangular	27	-	-	-	-	70◦	grey chert
70	triangular	15	-	-	-	-	40◦	grey chert
91	triangular	26.5	-	-	-	-	80◦	tan chert
79	triangular	22	-	-	-	-	70◦	tan chert
62	triangular	21.5	-	-	-	-	60◦	tan chert
294	rectangular	29	-	-	-	-	50◦	Ramah
98	rectangular	-					45◦	grey chert
125	microblade	10	-	-	-	-	40◦	black chert
81	round	-	-	-	-	-	30◦	black chert
322	round	-	-	-	-	-	40◦	black chert
n		22	13	13	13	13	25	
avg		24	18	17.5	17.5	21	58◦	
range		10-33	9.5-29	13-28	13-27.5	15-27	30◦ - 80◦	

A1.5.7 Burin-like-Tools: n = 13 (3% of total artifact assemblage)

There are 13 burin-like-tools identified in this collection (Figure A1.7). These include 11 grey chert specimens, one tan chert, and one made of slate. All the chert burin-like-tools have been chipped then bifacially ground with their distal ends ground and beveled. Striation marks are clearly visible on the ground surfaces. Four of these are side-notched, two with only one notch on one side, the other two with a single set of notches that are on opposite sides and parallel to each other. All but one (HeCi-30:321) (Figure A1.7 g) are incomplete, with their distal or proximal edges being broken, which seems to suggest that burin-like-tools are produced on broken bifaces that have been ground and reworked once they were no longer functional as a biface. The slate specimen, HeCi-30:319 (Figure A1.7 h), is shaped differently than the chert examples and could be considered a preform (see Table A1.7 for a summary of burin-like-tools)

A1.5.8 Burin Spalls: n = 1 (<0.5% of total artifact assemblage)

Only one burin spall, made from black chert, was identified in the St. John's Harbour 5 collection. It is whole and measures 11 mm x 4 mm x 2.5 mm.

A1.5.9 Celts: n = 5 (1% of total artifact assemblage)

The collection contains three celts and two celt preforms. One complete slate specimen is broken in two pieces, which fit together (Figure A1.8 a). Its distal end is rounded, beveled and ground with the grinding marks apparent on the surface. The other two celts are smaller ground slate pieces, with HeCi-30:447 (Figure A1.8 b) being virtually complete nephrite celt with a prominent ground and beveled distal edge, and HeCi-30:292 (Figure A1.8 c) an incomplete tan chert lateral piece, with little to indicate overall shape.

Two preforms (Figure 9 a and b) have a roughly rectangular shape to indicate a celt shape, but thinning and grinding has not been done to complete the items.

Table A1.7: Summary of St. John's Harbour 5 Burin-like-tools Notching

Cat #	Base width	Notch Height from base L	Notch Height from base R	Notch Height L	Notch Height R	Notch Width L	Notch Width R	Material	Chipped and ground?
25	13	3	-	3.5	-	2.5	-	grey chert	yes
200	16	3	2	6	7	2	1.5	grey chert	yes
319	10	0	3.5	9	6.5	3	2	slate	ground only
321	16.5	2	-	6	-	1.5	-	grey chert	yes
335	12	2	1.5	4.5	5	2	2.5	tan chert	yes
n	5	5	3	5	3	5	3		
avg									

Figure A1.7
Burin-like-tools from St. John's Harbour 5, HECi-30

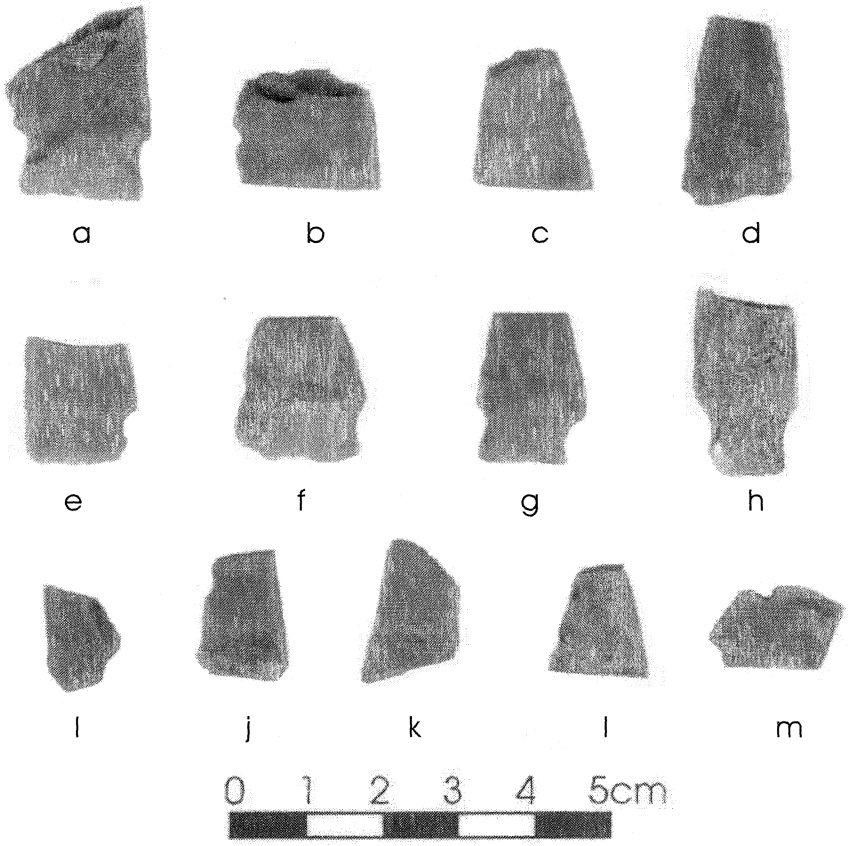


Figure A1.8
Celts from St. John's Harbour 5, HeCi-30

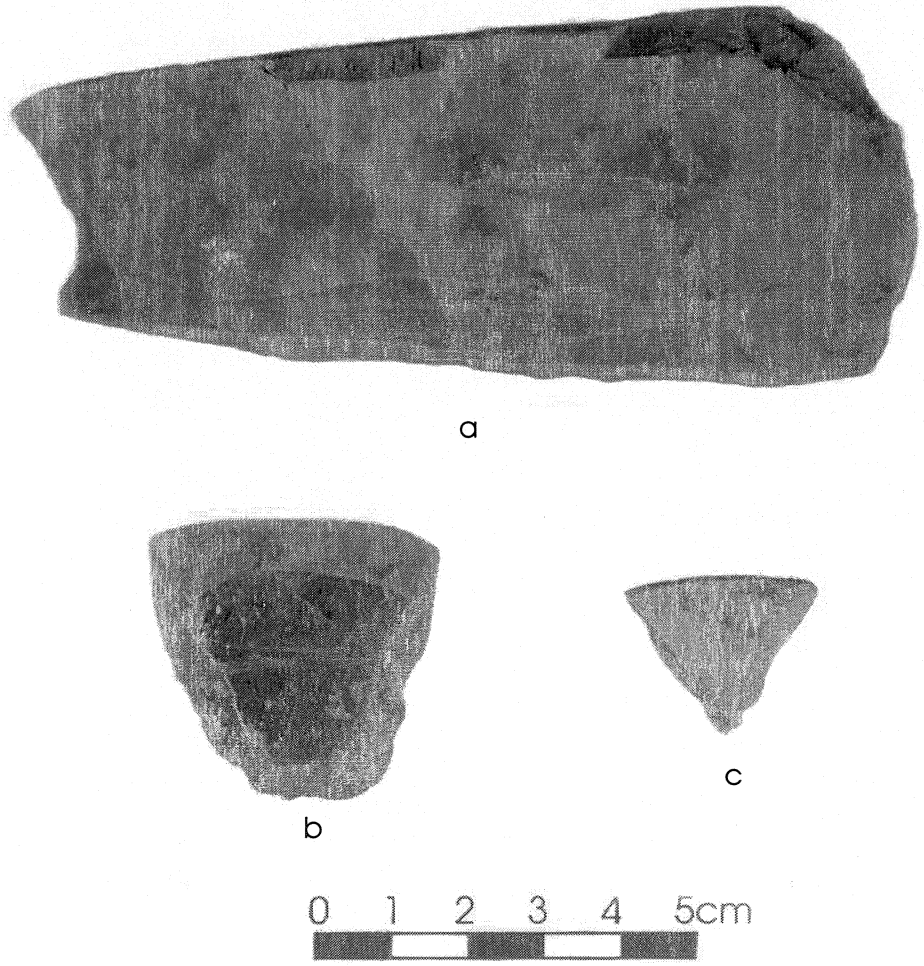
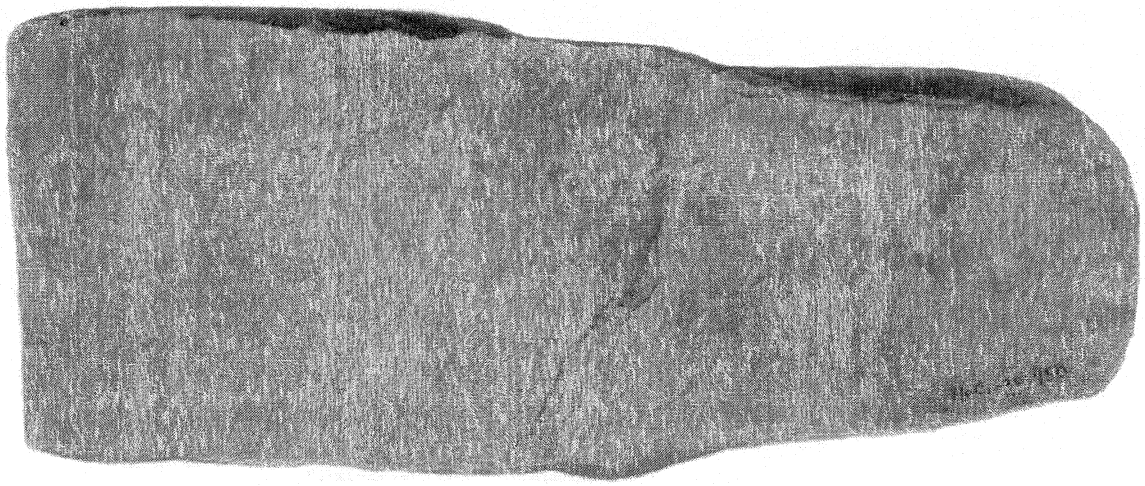
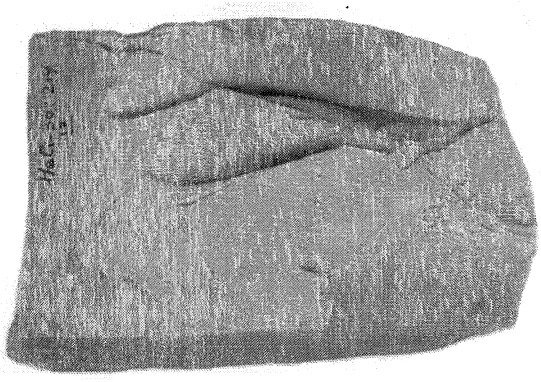


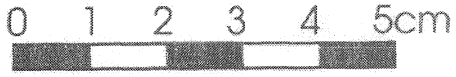
Figure A1.9
Celt Preforms from St. John's Harbour 5, HeCi-30



a



b



A1.5.10 Microblades: n = 268 (56% of total artifact assemblage)

Microblades represent the largest tool category in the collection, with over 50% of the artifacts identified as a microblade. In total, 268 microblades are identified, represented by 36 complete microblades, 28 distal portions, 78 midsections and 126 proximal portions. There is also a greater variety of material types than has been noted in the other artifact categories, with brown chert and a translucent brown/grey chert also identified. In total, chert accounts for 50.5% of the material used for microblades. The following chart summarizes the material types:

Table A1.8: St. John's Harbour 5 Microblades by Material Type

Black chert	Brown chert	Grey chert	Tan chert	Translucent chert	Quartz crystal	Ramah	Total
43	12	59	13	8	44	89	268
16%	4.5%	22%	5%	3%	16.5%	33%	100%

Only the 36 complete microblades could be measured both in length and width. The width range for the complete microblades was 3.5 to 20 mm with an average of 11 mm, the length range was 10 - 75 mm with an average of 26 mm. The microblade that measured 75 mm (HeCi-30:137) was unusual, and if removed the range is only 10 mm to 53 mm, with an average of 24 mm.

Only width could be commented on for all 268 microblades. The range is 1.5 to 20 mm, with the average being 9 mm. The majority of specimens, represented by 227 microblades, or 85%, fell between 6.5 and 15.0 mm.

Table A1.9: Summary of St. John's Harbour 5 Complete Microblades

Cat. #	Length mm	Width mm	Length to width ratio	Thickness mm	Material
11	21	18	1.2:1	2	black chert
15	28	9.5	2.9:1	4	tan chert
42	18	10	1.8:1	3	qtz. crystal
86	17	7	2.4:1	2	grey chert
97	19	7	2.7:1	2	grey chert
100	12	6	2.0:1	1.5	chert, brown
113	29	10	2.9:1	2.5	grey chert
135	14	6.5	2.2:1	2	grey chert
137	75	20	3.8:1	9	black chert
152	34	16	2.1:1	5	grey chert
188	50.5	12	4.2:1	5	grey chert
190	31	11	2.8:1	6	grey chert
231	53	14	3.8:1	7	Ramah
234	42	11	3.8:1	6	tan chert
254	21.5	7	3.1:1	2	brown chert
265	11.5	3.5	3.3:1	1	black chert
276	19	9	2.1:1	1	black chert
298	21	6.5	3.2:1	2	grey chert
308	21	7.5	2.8:1	2	grey chert
353	11.5	6	1.9:1	3	grey chert
355	10	4	2.5:1	1.5	grey chert
363	19	13	1.5:1	2	black chert
365	14	7	2.0:1	2	grey chert
366	29	12.5	2.3:1	2	black chert
372	20	12	1.7:1	3.5	grey chert
392	19	10.5	1.8:1	4	black chert
397	17	8	2.1:1	2	quartz crystal
417	21	10	2.1:1	2	black chert
423	21.5	9	2.4:1	2	grey chert
441	46	11	4.2:1	4	grey chert
451	20	7	2.9:1	2	Ramah
459	25.5	10	2.6:1	2	Ramah
481	42.5	12	3.5:1	6.5	Ramah
493	48	8	6.0:1	2	grey chert

Cat. #	Length mm	Width mm	Length to width ratio	Thickness mm	Material
505	13	4.5	2.9:1	1	Ramah
507	10.5	5	2.1:1	1.5	Ramah
n	36	36	36	36	
avg	25.5	9.5	2.7:1	3	
range	10-75	3.5-20	1.2:1 - 6.0:1	1 - 9	

Table A1.10: Summary of St. John's Harbour 5 Microblade Widths

Width of microblade, Range in mm	Number of microblades	% of microblades
0.5 - 3.0	1	0 % (>1%)
3.5 - 6.0	22	8%
6.5 - 9.0	82	31%
9.5 - 12.0	100	37%
12.5 - 15.0	45	17%
15.5 - 18.0	16	6%
18.5 - 21.0	2	1%
n	268	100%
avg	9 mm	
range	1.5 - 20	

Retouching can be observed on 43 of the 268 microblades. This includes 22 that have retouching along the edges, 17 of which are stemmed, two that are notched, and two that are both stemmed and notched. Presumably the stemming and notching were a function of hafting techniques for the microblade to be attached to some sort of handle (See Figure A1.10).

Table A1.11 summarizes the information collected on the microblades that are stemmed including whether the stem was pronounced, or slight in appearance.

Figure A1.10
A Selection of Microblades from St. John's Harbour 5, HeCi-30

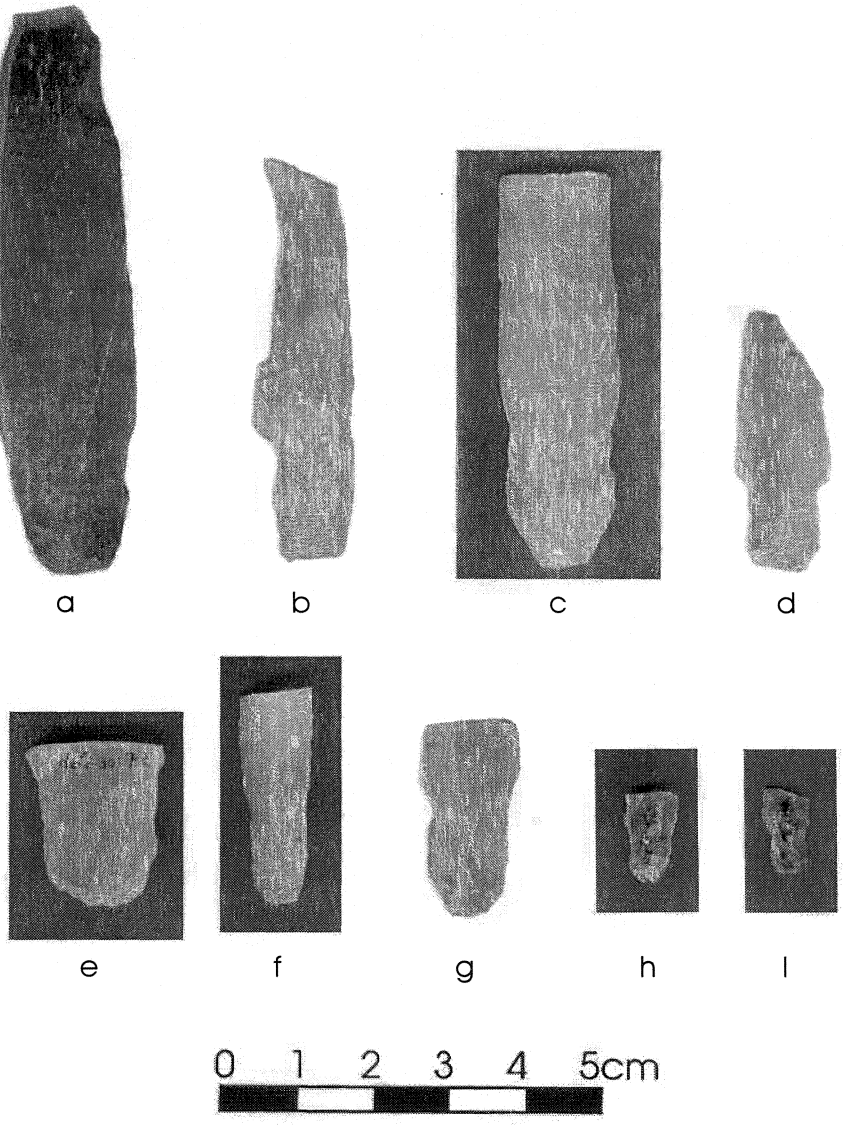


Table A1.11: Summary of St. John's Harbour 5 Microblade Stems

Cat #	Condition	Base width mm	Shoulder width mm	Base to shoulder mm L	Base to shoulder mm R	Material	Pronounced or slight
137	complete	10	17	20.5	19	black chert	pronounced
366	complete	4	12	11	11	black chert	slight
231	complete	9	13	18	17	Ramah	pronounced
64	proximal	7	10.5	7.5	8	black chert	slight
72	proximal	12	18	20	18	Ramah	pronounced
88	proximal	5	8	14	14	quartz crystal	slight
101	proximal	4.5	6.5	5.5	5	quartz crystal	pronounced
123	proximal	6	9.5	8	9	Ramah	slight
151	proximal	10	12	11	12.5	grey chert	slight
287	proximal	8.5	12	12	13	Ramah	slight
339	proximal	6.5	13	15	15	grey chert	pronounced
404	proximal	5	5.5	7	6	quartz crystal	slight
139	proximal	4	6	5	7	quartz crystal	slight
140	proximal	4	5.5	6.5	6.5	quartz crystal	pronounced
1	proximal	8	15	20	19.5	Ramah	pronounced
10	proximal	7	12.5	18	18	Ramah	slight
239	proximal	9.5	12	12	12	grey chert	pronounced
avg n=17		7	11	12	12		

A1.5.11 Utilized Flakes: n = 37 (8% of total artifact assemblage)

This category consists of those flakes that exhibit signs of some working along the edges. These utilized flakes are generally larger in size than many of the artifacts in the collection, with the smallest retouched flake being 15 x 10.5 mm and the largest 47.5 x 38.5 mm. The material is varied with the flakes represented by eight black chert, seven tan chert, two quartz crystal, ten grey chert, and ten Ramah.

A1.5.12 Ground Flakes: n = 17 (4% of total artifact assemblage)

Ground flakes are similar to retouched flakes in that after the flake was removed from the core there was deliberate reworking. There are ten nephrite flakes and one quartzite flake

that show evidence of grinding. The nephrite pieces exhibit varying degrees of grinding with some showing grinding on the entire surface, and others only slight areas of grinding. None indicate any shape that would suggest a tool category.

A1.5.13 Cores: n = 12 (3% of total artifact assemblage)

There are twelve cores from which either flakes or microblades have been removed in the collection. Of these, four are flake cores, with two made from tan chert, one from quartz and one from grey chert. The remaining eight, one chert and seven quartz crystal, all have evidence of microblade removal.

A1.5.14 Unidentified worked pieces: n = 11 (2% of total artifact assemblage)

There are 11 pieces that appear worked with flake scars on their surface, but which have no other apparent shape or indication of function. These include three quartz crystal, one quartzite, three Ramah, two black chert, and two grey chert. There may be some evidence of heat treatment on one of the Ramah pieces, HeCi-30:52, as indicated by the milky white colour of the surface.

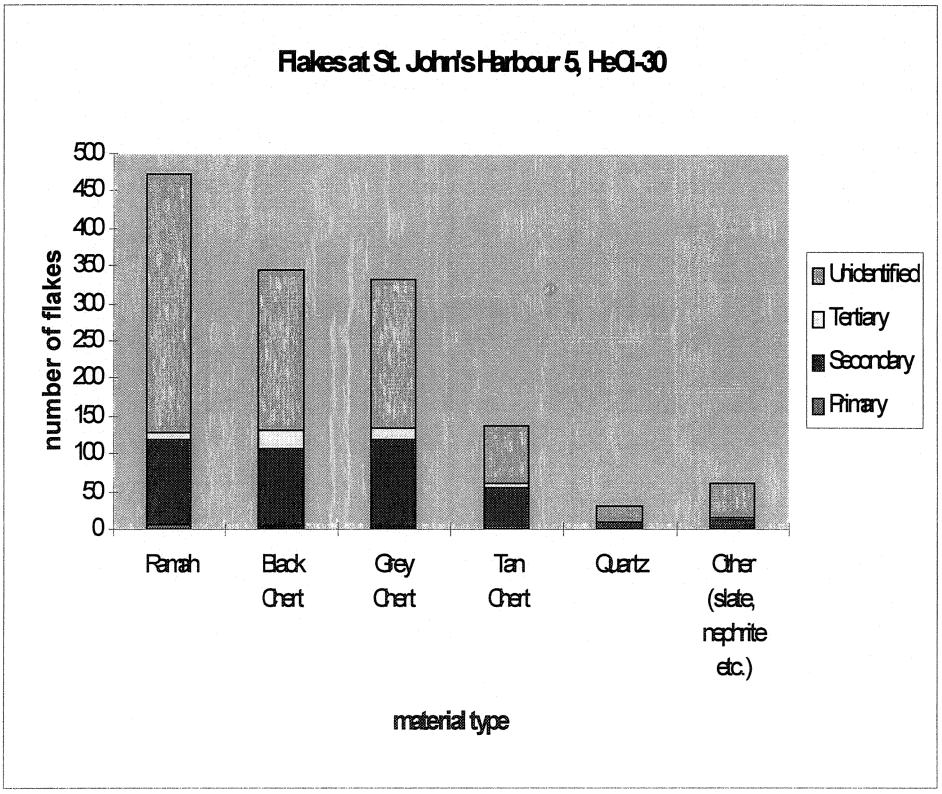
A1.5.15 Flakes n = 1379 (not included in calculation of total artifact assemblage)

Flakes were counted and divided into material categories, with Ramah, black chert, grey chert, tan chert and quartz crystal being the predominantly recognized materials. All other materials were classified under 'other' (See Table A1.12). Flakes were also divided into primary, secondary, tertiary flakes and unidentifiable flakes and shatter.

Table A1.12: St. John's Harbour 5 Flakes by Type and Material

Flake Type	Black Chert	Grey Chert	Tan Chert	Ramah	Quartz crystal	Other (slate, nephrite etc.)	Total	%
Primary	2	4	0	5	0	1	12	1%
Secondary	105	114	55	114	9	11	408	30%
Tertiary	23	17	6	9	0	2	57	4%
Unidentified	215	197	76	346	21	47	902	65%
Total	345	332	137	474	30	61	1379	
%	25%	24%	10%	34%	2%	5%		100%

Figure A1.11: Histogram of St. John's Harbour 5 Flakes by Type and Material



A1.16 Shatter n = 134 (not included in calculation of total artifact assemblage)

Shatter was separated from the flakes and was also noted in the collection. The following summarizes the shatter by material.

Table A1.13: Summary of St. John's Harbour 5 Shatter by Material

	Black Chert	Grey Chert	Tan Chert	Ramah	Quartz	Other (slate, nephrite etc.)	Total
Shatter	7	52	13	28	21	13	134
%	5%	39%	10%	21%	15%	10%	100%

A1.5.17 Artifact Summary

Excluding flakes and shatter, there is a total of 14 artifact categories identified in the St. John's Harbour 5 collection. Microblades are the most predominant artifact category, representing 56% of the 497 artifacts. The remaining 44% are represented by a variety of artifacts as is seen in Table 14. A comparison of material types indicates that chert is the predominant material of choice, followed by Ramah.

A1.6 Distribution of artifacts within the site and in relation to features

Of the 509 artifacts 400 can be associated directly with locations in the site and are not a result of surface collections. Figure A1.11 shows the distribution across the site. The half squares indicate those locations where artifacts were collected and noted as coming from a combination of two squares. Table A1.15 gives a detailed account of what artifacts were found in what locations.

Table A1.14: St. John's Harbour 5 Artifacts by Material Type

Material/ Artifact type	All cherts	Ramah	Quartz crystal	Quartzite	Nephrite	Slate	Other	Total	%
Endblades	12	12	0	0	0	0	0	24	5%
Knives	4	0	0	0	1	0	0	5	1%
Bifaces	21	13	1	0	0	0	0	41	9%
Biface Preforms	5	3	0	0	2	0	0	10	2%
Sideblades	6	1	0	0	0	0	0	7	%
Scrapers	22	3	0	0	0	0	0	25	5%
Burin-like tools	12	0	0	0	0	1	0	13	3%
Burin spalls	1	0	0	0	0	0	0	1	0 % (< 1%)
Celts	2	0	0	0	1	1	1	5	1%
Microblades	135	89	44	0	0	0	0	268	56%
Utilized flakes	25	10	2	0	0	0	0	37	8%
Ground flakes	3	0	0	1	13	0	0	17	4%
Cores	4	1	7	0	0	0	0	12	3%
Unidentified pieces	4	3	3	1	0	0	0	11	2%
TOTAL	256	141	57	2	17	2	1	476	
%	54%	30%	12%	0 % (< 1%)	4%	0 % < 1%)	0 % (< 1%)		100%

Figure A1.12
Artifact Disrtribution by Square for St. John's Harbour 5, HeCi-30

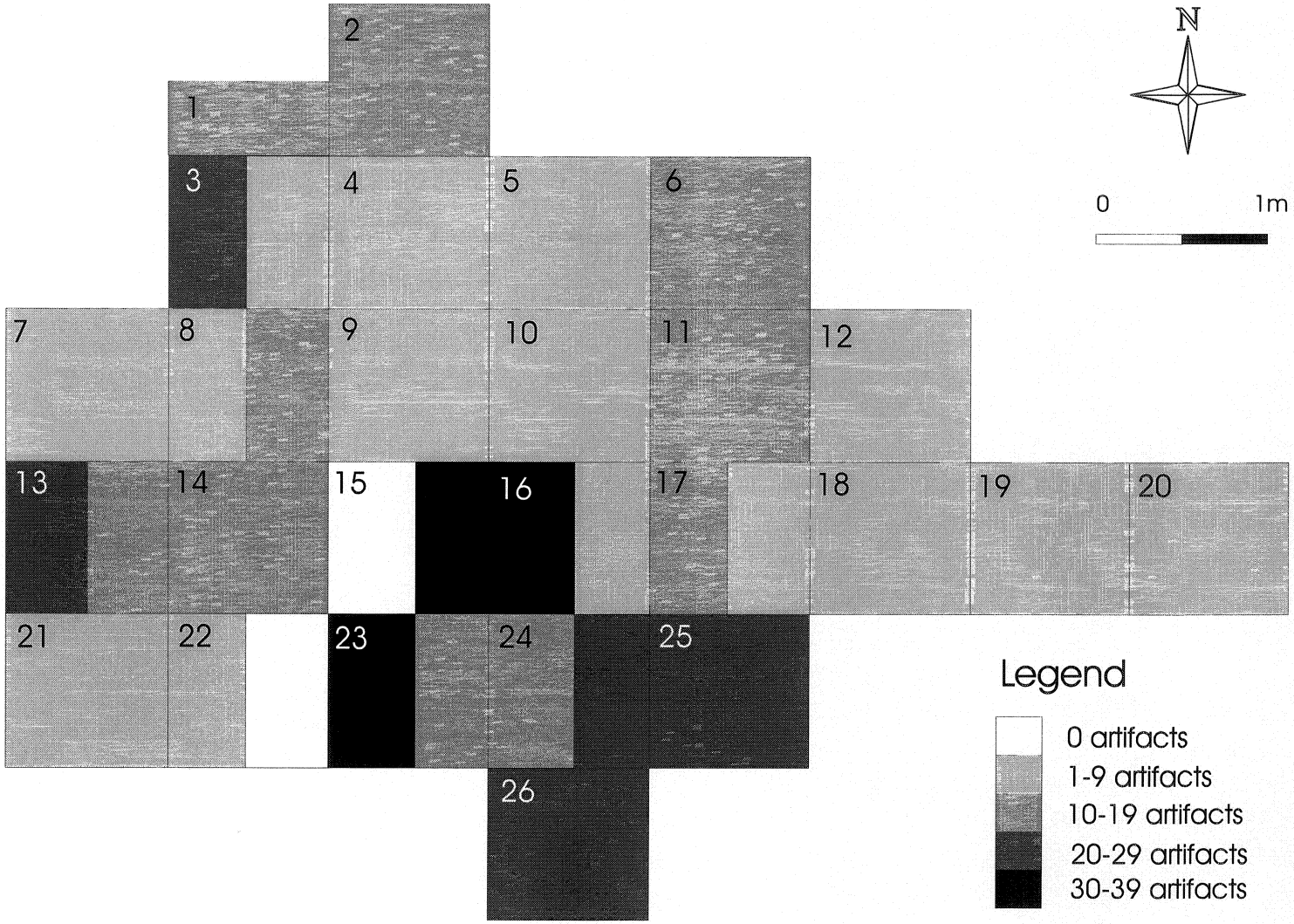


Table A1.15 : St. John's Harbour 5 Artifacts by Location on Site

Unit	Endblades	Knives	Bifaces	Sideblades	Scrapers	BLTs	Burin spalls	celts	microblades	utilized flakes	ground flakes	cores	unidentified worked	total
1	1		1		3				9					14
2	1				2				9	1				13
3	1		1		1	1			13	4				21
4	1								2					3
4 and 5						1			3		1		1	6
5	1		1		2				3			1		8
6	1	1	1						7					10
7					1	1			6					8
7 and 8				2					3					5
8	2	2	1		2				6					13
9			1						5		1			7
9 and 10			1			1			3	1			2	8
10			1						4					5
11	2					2			6					10
12	2							1	4		1			8
13			2	1		2			14	1		3	1	24
13 and 14			2						7	2	2			13
14	1		2		2		1		3	2	2	3	1	17
15														
15 and 16			2	1	3			1	18	6	1	2	2	36
16									2					2
17	1		2	1	4	2			7					17
17 and 18	1		1	1					2	1				6
18				1										1

Unit	Endblades	Knives	Bifaces	Sideblades	Scrapers	BLTs	Burin spalls	celts	microblades	utilized flakes	ground flakes	cores	unidentified worked	total
19						1		0.5	5					6.5
19 and 20									3					3
20									1					1
21	1		3						4					8
21 and 22									6	1				7
22														
23	1	1	6		1				18		3		1	31
23 and 24									8	4				12
24	2	1	2						16	1				22
25	2		3		1			2.5	14	2	2			25.5
26			6						21	1	1			29
1977 surface			4			1			24	5	2	3	1	40
1980 surface	3		8		3				8	2			1	25
1984 surface						1			2	2	1		1	7
under main hearth									2	1				3
Total	24	5	51	7	25	13	1	5	268	37	17	12	11	476

The distribution of flakes is illustrated in Figure A1.13. Table A1.16 shows the flakes by material and location, while Table A1.17 indicates flakes by type and location.

The distribution of artifacts and flakes indicates that there are concentrations of material in the midden areas as would be expected. The hearth area, although free of structural rocks and features, has enough material left behind to suggest a certain amount of activity occurring here. All of the artifact tool categories appear to be fairly evenly distributed throughout the site. The fieldnotes indicated that for the hearth pit in square 1 the archaeologists found many of the small and most of the big flakes in the hearth area where there was a large amount of charcoal and in the hearth pit itself; but there was no particular tool concentration found in the pit (Fitzhugh *et al.* 1980). There is a heavier concentration of flakes in the southwest end of the site, which may suggest more artifact preparation occurring here. The fact that the majority of flakes that could be identified are secondary and that there is little evidence of cortex on the flakes and tools suggests that the material to make the tools is arriving at the site after it has already been worked on somewhere else. This suggests that either preforms or virtually finished tools are being brought to the site, and not large amounts of unfinished raw material. Thus this site is not a primary tool manufacturing location. The small number of tertiary flakes could suggest that the final finishing of the tools is occurring elsewhere, or that given that tertiary flakes are generally smaller, these were missed during the excavation process.

Figure A1.13
Flake Disrtribution by Square for St. John's Harbour 5, HeCi-30

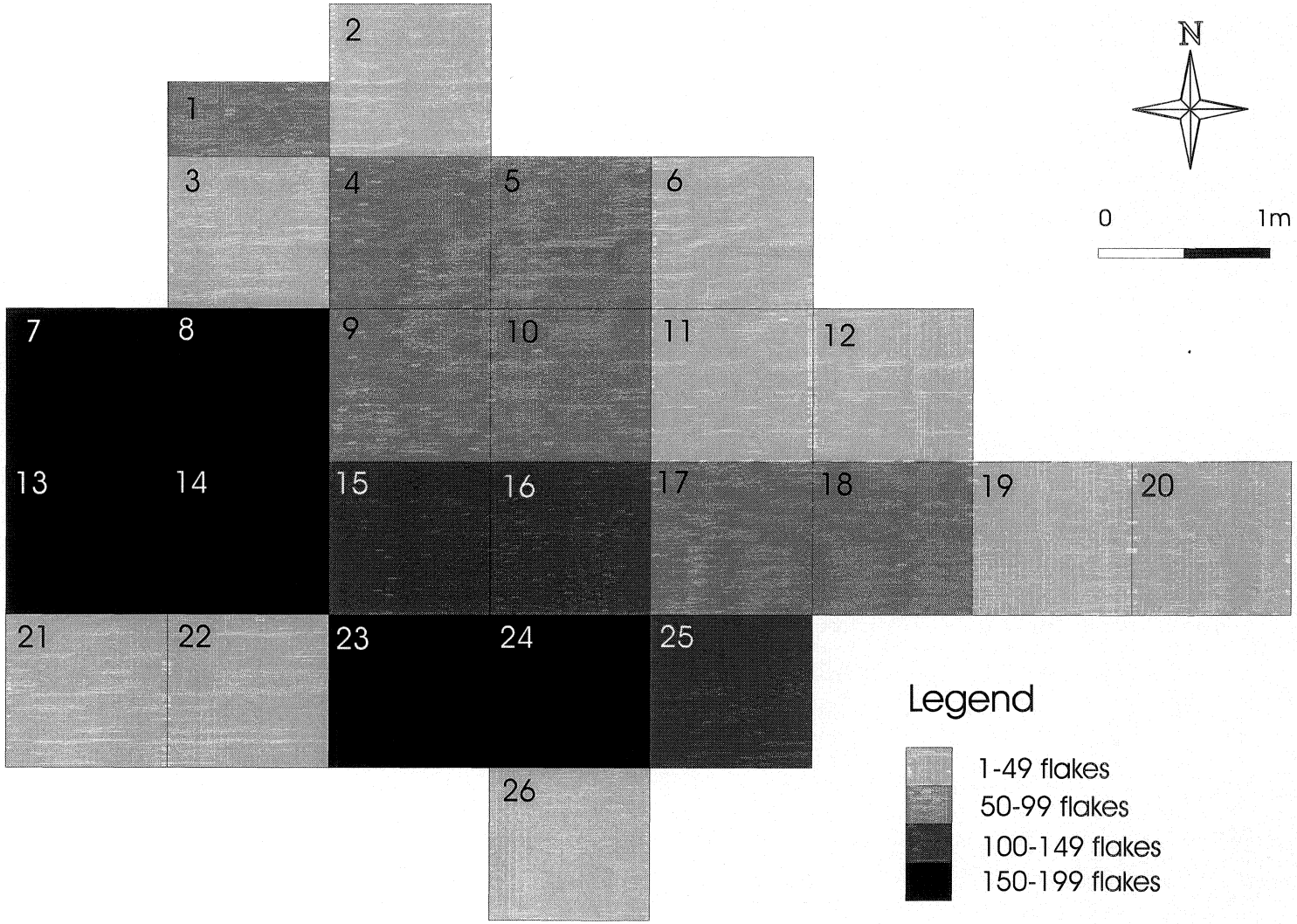


Table A1.16: St. John's Harbour 5 Flakes by Material and Location

Square	Ramah	Black Chert	Grey Chert	Tan Chert	Quartz Crystal	Other	TOTAL
1	8	3	31	15	0	1	58
2	4	1	8	7	1	0	21
3	8	11	14	4	0	0	37
4 and 5	9	2	23	14	1	3	52
6	9	2	5	2	0	1	19
7 and 8	35	34	60	28	5	11	173
9 and 10	23	19	16	4	4	3	70
11	14	3	11	3	1	2	36
12	4	3	3	1	0	1	12
13 and 14	71	43	36	6	3	11	171
15 and 16	30	35	19	10	6	0	100
17 and 18	24	15	15	3	1	5	63
19 and 20	15	1	6	6	0	0	27
21 and 22	32	23	19	5	0	1	80
23 and 24	86	79	4		6	0	175
25	17	38	41	15	1	4	117
26	81	14	15	7	1	3	138
1977 surface	1	1	0	0	0	4	6
1980 surface	0	1	6	6	0	3	16
1984 surface	3	0	1	1	0	3	8
TOTAL							1379

Table A1.17: St. John's Harbour 5 Flakes by Type and Location

Unit	Primary	Secondary	Tertiary	Unidentified	TOTAL	%
1	1	34	4	19	58	4%
2	0	9	1	11	21	2%
3	0	12	2	23	37	3%
4 and 5	0	16	2	34	52	4%
6	0	6	1	12	19	1%
7 and 8	0	54	10	109	173	13%
9 and 10	1	17	4	48	70	5%
11	0	11	2	23	36	3%
12	0	3	0	9	12	1%
13 and 14	1	38	10	122	171	12%
15 and 16	0	24	3	73	100	7%
17 and 18	0	13	3	47	63	5%
19 and 20	2	10	1	14	27	2%
21 and 22[1]	1	19	1	59	80	6%
23 and 24	1	47	6	121	175	13%
25	1	47	4	65	117	8%
26	2	40	3	93	138	10%
1977 surface	1	1	0	4	6	0%
1980 surface	1	4	0	11	16	1%
1984 surface	0	3	0	5	8	0%
TOTAL	12	408	57	902	1379	
%	1%	30%	4%	65%		100%

[1] The fieldnotes for squares 22 and 23 noted the following: "Caution should be taken in flake counts from the two squares because I chopped through part of 1S/1E [Square 23] and deposited its contents into the 1S/0E [Square 22] bag prior to the establishment of separate square bags. Also, the As/0E [Square 22] bag was blown across my unit and its contents scattered across the pits - I may have picked up some flakes from the wrong square in the recovery process." (Fitzhugh et al. 1980).

A1.7 Discussion of St. John's Harbour 5

St. John's Harbour 5 appears to have been a small camp site where a group of Groswater people lived for a relatively short period of time while hunting sea resources.

The site location is ideal for taking advantage of the marine resources in the area and the natural features of the rocky hills that the site is situated between indicates that it is also a sheltered area. Evidence of blubber-stained rocks in the central hearth area and throughout the site attest to the use of the marine resources at this location. Fitzhugh (1980) suggested that it may have been a winter site.

Fitzhugh (1980) interpreted the site as having had a single occupation. The stratigraphy appears to have been relatively simple, with no indication of multiple use. While site features are few, with only one house appearing to have been present, as indicated by the double lines of flat stones and central hearth area, there is a buildup of two midden areas, along with an external hearth, and numerous artifacts (n=476). These could suggest some length of time in occupation or reoccupation. Even if the site were reused a number of times, there does not appear to be a lot of mixing of features, such as two or three hearths moved around the site area, or multiple axial features in a small area, suggesting that the site was used in the same manner throughout the life of the site. Furthermore, the size of the site, and small number of features, suggests that the site could have been used only be a small number of people at any one time, perhaps a group of less than ten persons.

Assuming there may have been more than one occupation of the site, the artifacts show a general homogeneity that suggests that the site was lived at by the same people over time. The artifacts found, on first inspection, do appear to resemble the Groswater culture, including raw

material use.

Radiocarbon dates from the site also indicate that there may have been reoccupation over a longer period of time. When calibrated the two dates from the site are different. The older date at 2540 +/- 75 B.P. (SI-4825) (Calibrated to 1 sigma 2750 (2728) 2474 B.P.) And the younger date at 2190 +/- 70 B.P. (SI-4824) (Calibrated to 1 sigma 2327 (2296, 2270, 2176, 2172, 2153) 2075 B.P.) (Stuiver and Reimer 1980)). Running a student's t-test shows that these two dates are significantly different, thus suggesting that these charcoal samples represent two different time uses of the site.

There are three artifacts in the St. John's Harbour 5 collection that may be Pre-Dorset. These are the burin spall, and the two bifaces. However, without any other Pre-Dorset evidence at the site, it is possible these are artifacts have made their way to the site through other means, such as site scavenging.

APPENDIX 2

MISSING ARTIFACTS FOR ST. JOHN'S HARBOUR 5, HECI-30

At the time that this collection was retrieved from the Smithsonian in 1998 eleven artifacts were noted as missing, although accounted for in the original database. Subsequent searches have yet to locate these artifacts.

Table A2.1: Missing Artifacts from St. John's Harbour 5, HeCi-30

Cat. #	Artifact Type	Modifications	Material	State
4	endblade	side notched	chert, black	midsection
12	knife	side notched	tan chert	proximal
13	biface		Ramah	proximal
17	knife	side notched; asymmetric	tan chert	complete
19	endscraper		chert, mottled	distal
26	biface		chert, mottled	distal
28	microblade	retouched	Ramah	proximal
29	endblade	notched (box-based)	chert, mottled	proximal
31	biface		Ramah	proximal
40	biface		chert, grey	proximal
41	biface		Ramah	fragment

APPENDIX 3
GROSWATER SITES IN LABRADOR, PRE 2001

All sites listed were compiled from the records of the Provincial Archaeology Office of the Province of Newfoundland and Labrador or the records of the Smithsonian Institution. Dates were calibrated using Intercepts Method A (Stuiver et al. 1998).

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
1	Saglarsuk Bay 1	IlDb-04	Pre-Dorset or Groswater? Dorset (Middle); Thule; Inuit	SC[1]				Not at Provincial Museum **NOT USED IN THIS STUDY**
2	Brownell Point	IiCx-02	Pre-Dorset; Groswater?; Dorset (Early?); Inuit	SC, excavated			slab pavement is possible structure	Not at Provincial Musuem **NOT USED IN THIS STUDY**
3	Nachvak Village	IgCx-03	Pre-Dorset; Groswater; Dorset; Late Dorset; Thule; Inuit?	SC, tested, excavated	2410 +/- 60 (SI-4004) charcoal (Fitzhugh, personal communication)	2707 (2358) 2350		Not at Provincial Museum
4	Jens Haven Cove 2	IdCr-40	Maritime Archaic; Pre-Dorset; Groswater; Dorset; Inuit	SC				At Provincial Museum 1 Groswater artifact
5	Kangalasirovik Island 07	IdCr-21	Pre-Dorset; Groswater?	SC				Not at Provincial Museum **NOT USED IN THIS STUDY**

[1] SC = Surface collected

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
6	Kangalasirovik Island 06	IdCr-20	Groswater; Dorset; Inuit	SC				Not at Provincial Museum
7	Bear Island	IdCr-12	Groswater? Dorset; Inuit	SC, tested, excavated				At Provincial Musem **NOT USED IN THIS STUDY**
8	Rose Island Site W	IdCr-9	Pre-Dorset; Groswater; Dorset (Early and Middle)	SC, tested, excavated				At Provincial Museum several hundred artifacts
9	Rose Island Site X	Id Cr-8	Pre-Dorset; Groswater?	SC, tested, excavated				At Provincial Museum 30+ artifacts
10	Rose Island Site Y	IdCr-5	Pre-Dorset; Groswater; Dorset (early?)	SC, tested, excavated				At Provincial Museum several hundred artifacts
11	Rose Island Site E	IdCr-4	Pre-Dorset; Groswater; Dorset	SC, tested, excavated	2715+/-130 I-5252 charcoal (Morlan 2002) Tuck rejected this date as he suspected contamination from above layer **DATE NOT USED IN THIS STUDY**			At Provincial Museum several hundred artifacts
12	Handy Island 3	IdCq-27	Pre-Dorset; Groswater?	SC				Not at Provincial Museum **NOT USED IN THIS STUDY**

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
13	Shuldham Island 09	IdCq-22	Groswater; Dorset (Middle; Late); Thule; Maritime Archaic?; Recent Indian (Point Revenge)	SC, tested, excavated				At Provincial Museum several hundred artifacts; complicated site to divide out cultural components
14	Big Falls	IcCt-2	Groswater; Dorset; Thule	SC, tested, excavated				Part at Provincial Museum 300+ artifacts recorded (Tuck's collection unaccounted for)
15	Torr Bay 6	IcCr-14	Pre-Dorset? Groswater?	SC			paved structure in bedrock outcrop	At Provincial Museum 3 artifacts **NOT USED IN THIS STUDY**
16	Torr Bay 4	IcCq-15	Groswater; Inuit	SC			midpassage structure with central hearth	At Provincial Museum 14 artifacts
17	Tikeratsuk West	IbCp-1	Maritime Archaic; Pre-Dorset; Groswater; Early Dorset; Inuit	SC				Not at Provincial Museum
18	Garnet Point 1	IaCr-01	Pre-Dorset; Groswater; Dorset (Early, Middle)	SC				Not at Provincial Museum
19	Finger Point 4	HlCo-06	Maritime Archaic?; Pre Dorset; Groswater?	SC				At Provincial Museum **NOT USED IN THIS STUDY**
20	Green Island 6	HkCk-01	Dorset; Inuit or Thule; Pre-Dorset or Groswater	SC, tested				At Provincial Museum **NOT USED IN THIS STUDY**

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
21	Okak 4	HjCl-04	Pre-Dorset; Groswater	SC, tested				At Provincial Museum 10+ Groswater artifacts
22	Okak 1 (Kivalekh)	HjCl-01	Inuit; Dorset; Pre-Dorset; Groswater	SC, tested				Part at Provincial Museum 22+ artifacts; Groswater artifacts not obviously identified
23	Nuasornak 2	HiCl-01	Pre-Dorset; Groswater	SC	2900 +/- 90 B.P. (Beta-25197) Charcoal (Cox 2002:3)	3208 (3056, 3054, 3000) 2886	round mid-passage tent ring; hearth	Not at Provincial Museum
24	Perry's Gulch 1	HgCi-01	Groswater	SC				Not at Provincial Museum 1 artifact recorded
25	Approach Point 2	HfCj-04	Pre-Dorset; Groswater	SC, tested?				Not at Provincial Museum
26	Thalia Point 6	HfCi-13	Pre-Dorset; Groswater; Intermediate Indian	SC				At Provincial Museum 2 Groswater artifacts
27	Thalia Point 2	HfCi-02	Maritime Archaic; Pre-Dorset; Groswater	SC, tested	2500 +/- 160 B.P. (GSC-1381) charcoal (Morlan 2002)	2762 (2710, 2629, 2617, 2562, 2542, 2518, 2513) 2348		At Provincial Museum 30 Groswater artifacts
28	Questlet Isles 4	HeCi-43	Groswater; Dorset	SC, tested				Not at Provincial Museum 2 Groswater artifacts recorded

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
29	St. John's Harbour 5	HeCi-30	Groswater	SC, tested, excavated	2190 +/- 70 B.P. (SI-4824) charcoal (Fitzhugh, personal communication) 2540 +/- 75 B.P. (SI-4825) charcoal (Fitzhugh, personal communication)	2347 B.P. - 1995 B.P. 2779 B.P. - 2356 B.P.	Axial feature with paving stones; midden; hearths	At Provincial Museum 476 artifacts and flakes
30	St. John's Harbour 04	HeCi-29	Groswater	SC				At Provincial Museum 3 artifacts
31	St. John's Harbour 01	HeCi-26	Groswater	SC				At Provincial Museum 7 artifacts
32	Black Island 5A	HeCi-24	Groswater	SC				Not at Provincial Museum 2 artifacts recorded
33	Sculpin Island East 5	HeCh-10	Pre-Dorset; Groswater; Dorset; Inuit	SC				At Provincial Museum 2 Groswater artifacts
34	St. John's Island 03, L1 to L3	HeCf-26	Groswater; Maritime Archaic; Undetermined	SC, tested				Not at Provincial Museum 24 Groswater artifacts recorded
35	Marshall Island 02	HeCf-19	Groswater	SC				Not at Provincial Museum 11 artifacts recorded

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
36	St. John's Island 01	HeCf-02	Groswater	SC, tested	2645 +/- 65 (SI 2990) charcoal (Fitzhugh, personal communication)	2782 (2754) 2744	possible tent ring	Not at Provincial Museum 133 artifacts recorded - mostly microblades
37	Base Island 3	HdCj-04	Groswater; Pre-Dorset	SC				Not at Provinical Museum 12 Groswater artifacts recorded
38	Base Island 1	HdCj-01	Intermediate Indian; Groswater; Inuit	SC				Not at Provincial Museum
39	Ballybrack Valley South 3	HdCi-11	Intermediate Indian; Groswater	SC				Not at Provincial Museum 1 Groswater artifacts recorded
40	Dog Bight L10	HdCh-11	Maritime Archaic; Pre-Dorset; Groswater; Dorset	SC				Not at Provincial Museum 1 Groswater artifacts recorded
41	Dog Bight L09	HdCh-09	Maritime Archaic; Pre-Dorset; Groswater	SC				Not at Provincial Museum 2 Groswater artifacts recorded
42	Dog Bight L05	HdCh-05	Pre-Dorset; Groswater	SC, excavated			3 house structures reported with midpassages and hearths but unclear whether associated with Pre Dorset or Groswater componenet	Not at Provincial Museum 17 artifacts recorded
42	Kangekukuluk Island 1	HcCk-04	Pre-Dorset; Groswater; Dorset	SC				Not at Provincial Museum 6 artifacts reported

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
44	Tinigivik Hill 2	HcCi-07	Groswater	SC				At Provincial Museum 1 artifact and 3 flakes
45	Skull Island 05	HcCg-08	Pre-Dorset; Groswater; Thule	SC				At Provincial Museum flakes and shatter
46	Big Island 1 (Voisey's Bay 1)	HbCl-03	Groswater	SC, tested, excavated	2075 +/- 85 (SI-5830) charcoal (Fitzhugh, personal communication)	2149 (2038, 2027, 2006) 1929	structure with stone pavement; hearth	At Provincial Museum 30 artifacts
47	High Kamarsuk	HbCj-04	Maritime Archaic; Pre-Dorset; Groswater; Intermediate Indian; Thule; Inuit	SC				At Provincial Museum 5 artifacts
48	Cape Little	HbCi-3	Maritime Archaic; Intermediate Indian; Pre-Dorset; Groswater	SC			2 roughly parallel rows of flat slabs - suggestive of a midpassage	At Provincial Museum 41 artifacts
49	House Harbour 2	HbCg-03	Groswater; Dorset (Middle)	SC, tested			structural features but unclear whether associated with the Groswater or Middle Dorset components	At Provincial Museum 23 artifacts and flakes recorded

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
50	Jaeger Island	HbCf-01	Pre-Dorset; Groswater; Dorset; Inuit	SC, tested?			House structures butSite Record Form unclear as to which culture they are associated	Part at Provincial Museum 4+artifacts
51	Solomon Island 2	GlCe-06	Groswater	SC, excavated	1930 +/- 95 (SI-5831) charcoal and soil (Fitzhugh, personal communication)	1989 (1875) 1737	deflated hearth	At Provincial Museum 26 artifacts
52	Flower's Bay 2	GlCe-04	Maritime Archaic; Intermediate Indian; Groswater	SC				At Provincial Museum 2 artifacts
53	Flower's Bay 1	GlCe-03	Intermediate Indian; Groswater	SC				At Provincial Museum 1 artifact
54	Broomfield	GkCd-01	Intermediate Indian; Groswater	SC				At Provincial Museum 2 artifacts
55	Napatalik 1	GjCc-13	Groswater?	SC, excavated				Not at Provincial Museum 3 artifacts and flakes reported **NOT USED IN THIS STUDY**
56	Island North of Napatalik	GjCc-09	Groswater?; Inuit?	SC				At Provincial Musem; 3 artifacts and flakes **NOT USED IN THIS STUDY**
57	Napatalik North 2	GjCc-08	Groswater	SC			2 mid-passage houses; cache pit; rock feature	At Provincial Museum 34 artifact; flakes not reviewed

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
58	Napatalik 3	GjCc-04	Groswater?	SC, tested				2 artifacts and flakes reported **NOT USED IN THIS STUDY**
59	Reef Island 2	GjCb-04	Groswater	SC				Not at Provincial Museum 13 artifacts reported
60	Tickle Arichat 2	GhBw-04	Groswater; Intermediate Indian	SC				At Provincial Museum 9 artifacts; flakes not reviewed

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
61	Postville Pentecostal	GfBw-04	Groswater; PE?; Intermediate Indian?	SC, excavated	2975 +/- 70 (SI-2989) charcoal, nitration pretreatment (Fitzhugh, personal communication; Morlan 2002) REJECTED as too early for the site based on typology **DATE NOT USED IN THIS STUDY** 2275 +/65 (SI-3359) charcoal (Fitzhugh, personal communication; Morlan 2002) 2230 +/- 65 (SI-3560) charcoal (Morlan 2002)	3318 (3204, 3192, 3161,3146, 3142, 3086, 3082) 3002 2348 (2331) 2159 2339 (2306, 2235, 2207, 2192, 2183) 2149	remains of 2 clear structures with axial features, box hearths; 2 more mid passage structures; 3 individual box hearth features; 2 middens	Part at Provincial Museum 1200+ artifacts; flakes not reviewed
62	Webeck Harbour 1	GfBm-01	Groswater; Recent Indian (Point Revenge); European	SC, tested				At Provincial Museum 4 artifacts; flakes not reviewed

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
63	Red Rock Point 2	GeBk-02	Groswater (late)	SC, excavated	2200 +/- 120 (SI 875) charcoal (Morlan 2002)	2345 (2298, 2267, 2177, 2170, 2156) 2011	hearth	Part at Provincial Museum 26 artifacts and 393 flakes noted; only 1 at Museum
64	Monument Point 1	GcBi-18	Maritime Archaic (Rattlers Bight Phase); Groswater?	SC, tested, excavated?				Not at Provincial Museum **NOT USED IN THIS STUDY**
65	East Pompey Island 1	GcBi-12	Groswater; Dorset?	SC, tested, excavated	2490 +/- 160 (GSC 1367) charcoal (Morlan 2002) 2620 +/- 70 (Beta-52072) charcoal (Morlan 2002)	2756 (2708, 2631, 2614, 2585, 2539, 2528, 2503) 2347 2779 (2751) 2736		Not at Provinical Museum 425 artifacts and 5520 flakes reported
66	Shell Island 1	GcBi-11	Recent Indian (Point Revenge); Groswater?; Historic	SC, tested, excavated				Not at Provincial Musem **NOT USED IN THIS STUDY**

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
67	Rattler's Bight (Buxhall)	GcBi-07	Maritime Archaic; Groswater	SC, tested, excavated	2720 +/- 125 (SI-930) charcoal (Morlan 2002) 2255 +/- 55 (SI-931) charcoal (Morlan 2002) 1960 +/- 80 (SI-2147) bone collagen (Morlan 2002) **DATE NOT USED IN THIS STUDY** due to problems dating marine mammal bone	2951 (2836, 2833, 2783) 2747 2343 (2324, 2322, 2313, 2217, 2212) 2156 1993 (1919, 1912, 1897) 1822	possible dwelling; hearth	At Provincial Museum 80 artifacts plus large quantity of microblades; flakes not reviewed
68	Ticoralak 5	GbBn-07	Groswater (late)	SC, tested, excavated	2400 +/- 160 (GSC-1314) charcoal (Morlan 2002)	2739 (2357) 2210	stone slabs, scattered rocks, possible hearth	Not at Provincial Museum 108 artifacts and 856 flakes reproted
69	Ticoralak 4	GbBn-05	Groswater	SC, tested			small arrangement of rocks	At Provincial Museum 4 artifacts; flakes not reviewed
70	Ticoralak 3	GbBn-04	Groswater	SC, tested	2340 +/- 140 (GSC 1217) charcoal (Morlan 2002)	2708 (2347) 2156	hearth	Part at Provincial Museum 24 of 77 artifacts; flakes not reviewed;

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
71	Ticoralak 2E	GbBn-03	Groswater	SC, tested			hearth	At Provincial Museum 9 artifacts
72	Ticoralak 2	GbBn-02	Groswater	SC, tested, excavated	2660 +/- 140 (GSC 1179, CMC 315) charcoal (Morlan 2002)	2919 (2761) 2623	hearth	At Provincial Museum 20 artifacts; flakes not reviewed
73	Ticoralak 1	GbBn-01	Groswater, Intermediate Indian	SC, tested	1850 +/- 60 (Beta 22401) charcoal (Morlan 2002) Date is from the Intermediate Indian context **DATE NOT USED IN THIS STUDY**		conical cache pits; 4 structures with mid-passage features, hearths, pits, fire cracked rocks (see Fitzhugh 1989 for more information)	At Provincial Museum flakes not reviewed
74	George Island 1	GbBh-1	Groswater	SC, tested			Oval tent walls with rocks nearly touching, central hearth, two large rocks serving as supports or anchors; small cache features	Not at Provincial Museum
75	Black Island Grady Harbour 2	FkBc-2	Palaeoeskimo (Late Groswater or early Middle Dorset)	SC, tested	1910 +/- 100 (Beta 56247) charcoal (Morlan 2002)			At Provincial Museum 2 artifacts **NOT USED IN THIS STUDY**

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
76	Black Tickle 1	FiAw-2	Groswater	SC, tested	1840+/-80 (Beta 22403) "date appears too recent for Groswater and may have resulted from contamination from natural charcoal" (PAO - Site Record Form) **DATE NOT USED IN THIS STUDY**		Remains of one or more houses; slabs of fire-burned rock	Part at Provicial Museum small microblade fragments and flakes
77	Square Isalnds 1	FeAw-1	Groswater	SC, tested				At Provincial Museum 3 artifacts; flakes not reviewed
78	Battle Harbour 1	FbAv-1	Groswater; Dorset (early Middle); European	SC, tested				At Provincial Museum 9 artifacts
79	Deer Island 1	FaAw-11	Groswater; Inuit	SC				At Provincial Museum 1 artifact
80	Mavco	EkBc-33	Palaeoeskimo (Groswater?)	SC, tested?				Not at Provincial Museum **NOT USED IN THIS STUDY**
81	Wrinkle	EjBe-20	Groswater; Dorset (Middle)	SC, tested?				Part at Provincial Museum 18+ artifacts
82	Schooner Cove Point (Schooner Cove 1)	EiBe-1	Groswater; Basque; European	SC, tested				Not at Provincial Museum

APPENDIX 4
EARLY DORSET SITES IN LABRADOR, PRE 2001

All sites listed were compiled from the records of the Provincial Archaeology Office of the Province of Newfoundland and Labrador or the records of the Smithsonian Institution. Dates were calibrated using Intercepts Method A (Stuiver et al. 1998).

	Site Name	**Borden Number**	**Cultural Affiliation**	**Arch. Activity**	**Reported Dates B.P.**	**Calibrated Date Ranges and Averages - 1 Sigma B.P.**	**House Features**	**Collection Notes**
1	Home Island 2	JbDb-1	Dorset (Early or Middle)	SC[1], tested			possible hold down rocks; flat slabs probably part of paving; paved area	Not at Provincial Museum **NOT USED IN THIS STUDY**
2	Martin Bay 5	JaDc-5	Dorset (Early?)	SC, tested			sod and rock winter structure, semi subterranean	Not at Provincial Museum **NOT USED IN THIS STUDY**
3	Avayalik Island 1	JaDb-10	Dorset (Early, Middle, Late)	SC, tested, excavated	2670+/-90 (SI-4001) walrus bone (Fitzhugh, personal communication) **DATE NOT USED IN THIS STUDY** Due to problems dating marine mammal bone	2852 (2770) 2744	midden; structures; caches; faunal preservation	Part at Provincial Museum 2000+ artifacts

[1] SC = Surface Collected

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
4	North Aulatsivik 4	IkDa-08	Dorset (Early, Middle, Late)	SC			midden; surface slabs and rock structures; sod/house depression (likely all Middle Dorset associated)	Not at Provincial Museum
5	Glass Bottom Cove 2, North Aulatsivik 3	IkDa-07	Dorset (Early/Middle)	SC, tested			slab structures and house depressions; faunal preservation	Not at Provincial Museum **NOT USED IN THIS STUDY**
6	Helga River	IjCx-2	Dorset (Early, Middle, Late)	SC, tested				Not at Provincial Museum 3 artifacts reported
7	Brownell Point	IiCx-02	Pre-Dorset; Groswater?; Dorset (Early?); Inuit	SC, excavated			slab pavement is possible structure	Not at Provincial Musuem **NOT USED IN THIS STUDY**
8	Peabody Point 2	IiCw-28	Dorset (Early), Thule, Inuit	SC, tested, excavated			midden	At Provincial Museum 77 Early Dorset artifacts
9	Amiktok Island 1	IiCw-11	Dorset (Early)	SC				Not at Provincial Museum 57 artifacts reported
10	Abbate River 1	IiCv-10	Dorset (Early or Middle); Inuit	SC, tested			possible mid-passage structures	Not at Provincial Museum **NOT USED IN THIS STUDY**

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
11	Komaktorvik	IhCw-1	Dorset (Early, Middle, Late); Thule; Inuit	SC, tested, excavated	2515 +/- 70 SI-3896 charcoal (Morlan 2002) 2495 +/- 70 SI-3897 charcoal (Morlan 2002) 2110 +/- 70 Beta-33049 charcoal and sand (Fitzhugh, personal communication)	2745 (2711, 2626, 2621) 2385 2470 (2709, 2630, 2616, 2580, 2541, 2526, 2509) 2362 2295 (2110, 2079, 2069) 1954	three shallow sod house depressions interpreted as semi-subterranean houses; midden; pits	At Provincial Museum 268 artifacts and flakes
12	Rose Island Site W	IdCr-9	Pre-Dorset; Groswater; Dorset (Early and Middle)	SC, tested, excavated				At Provincial Museum several hundred artifacts
13	Rose Island Site Q Band 2	IdCr-06	Palaeoeskimo (Early); Dorset (Early [Band 2], Middle)	SC, tested, excavated	2485 +/- 185 B.P. charcoal (Morlan 2002)	2772 (2708, 2632, 2612, 2590, 2537, 2531, 2493) 2340		At Provincial Museum
14	Shuldham Island 14	IdCq-35	Dorset (Early)	SC, tested, excavated			two tent rings and caribou blind possibly associated	Part at Provincial Museum 450 artifacts reported

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
15	Handy Island 2	IdCq-26	Dorset (Early)	SC			flat slabs - likely a structure	Not at Provincial Museum 26 artifacts
16	Shuldham Island 6	IdCq-19	Dorset (Early)	SC, tested, excavated			three structures with flat pavement, one with a central passage or axial feature	At Provincial Museum 68 artifacts
17	Torr Bay 3	IcCq-07	Dorset (Early)?; Pre-Dorset?; Inuit	SC				At Provincial Museum 21 artifacts **NOT USED IN THIS STUDY**
18	Tikeratsuk West	IbCp-1	Maritime Archaic; Pre-Dorset; Groswater; Early Dorset; Inuit	SC				Not at Provincial Museum
19	Garnet Point 1	IaCr-1	Pre-Dorset; Groswater; Dorset (Early, Middle)	SC				Not at Provincial Museum
20	Grubb Point 2	IaCp-6	Pre-Dorset; Dorset (Early)	SC			possible house depression	Not at Provincial Museum
21	Anchorstock Bay 2	HkCk-3	Maritime Archaic; Pre-Dorset; Dorset (Early)	SC, tested, excavated			possible rectangular structure	Not at Provincial Museum
22	Green Island 1	HjCk-02	Dorset (Early? Middle?); Inuit	SC, tested				At Provincial Museum 5 artifacts **NOT USED IN THIS STUDY**

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
23	Opingiviksuak Island 2	HiCj-03	Dorset (Early?)	SC				At Provincial Museum 4 artifacts **NOT USED IN THIS STUDY**
24	Opingiviksuak Island 1	HiCj-02	Dorset (Early or Middle)	SC				Not at Provincial Museum 15 artifacts reported **NOT USED IN THIS STUDY**
25	Iluvektalik Island 2	HhCk-02	Dorset (Early)	SC				At Provincial Museum 30 artifacts
26	Iluvektalik Island 1	HhCk-01	Dorset (Early)	SC, tested, excavated	2845 +/- 60 B.P. (SI 2510) from a mixture of fat and charcoal (Morlan 2002) **Rejected** because anomalously early **DATE NOT USED IN THIS STUDY**	3060 (2950) 2868	an almost completely eroded winter house; no mid-passage structure or entrance passage found; midden; was faunal preservation	At Provincial Museum 1104 artifacts
27	Thalia Point South End 1	HfCi-07	Dorset (Early)	SC				Not at Provincial Museum
28	Orton Island 1	HfCg-1	Maritime Archaic; Pre-Dorset; Dorset (Early?)	SC			possible structure	Not at Provincial Museum **NOT USED IN THIS STUDY**

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
29	Questlet Isles 4	HeCi-43	Groswater; Dorset (Early or Middle)	SC, excavated			oval/circular structure with clear pavement and axial feature	Not at Provincial Museum 96 Dorset artifacts reported **NOT USED IN THIS STUDY**
30	Chronicle Island 9	HeCf-14	Dorset (Early)	SC			line of boulders	At Provincial Museum 8 artifacts and flakes
31	Chronicle Island 8	HeCf-13	Dorset (Early)	SC			possible hearth feature and remains of tent feature; two clusters of cobbles, generally linear may be structures/ possible mid passage	At the Provincial Museum 6 artifacts and flakes
32	Chronicle Island 7	HeCf-12	Dorset (Early)	SC			boulders may mark a mid-passage or tent wall	At Provincial Museum 5 artifacts and flakes
33	Chronicle Island 6	HeCf-11	Pre Dorset; Dorset (Early)	SC				At Provincial Museum 6 artifacts
34	Chronicle Island 5	HeCf-10	Dorset (Early)	SC			circular tent ring and nearby cache pit	At Provincial Museum 15 artifacts
35	Chronicle Island 2	HeCf-7	Dorset (Early)	SC				Not at Provincial Museum 6 artifacts

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
36	Henry Island 1	HdCh-30	Dorset (Early)	SC, excavated			slab hearth, with central depression, possibly part of an axial structure	At Provincial Museum 18 artifacts and flakes
37	Dog Island - West Spur L5	HdCh-17	Dorset (Early), Pre-Dorset	SC, excavated	2680 +/- 70 SI-2978 charcoal, nitration pretreatment (Fitzhugh, personal communication)	2849 (2775) 2749	unbordered central passage pavement of rounded rocks	Not at Provincial Museum 71 artifacts
38	Dog Bight L3	HdCh-03	Dorset (Early)	SC, tested, excavated	2455 +/- 75 B.P. (SI 2522) charcoal (Morlan 2002) 2400 +/- 70 B.P. (SI 2153) charcoal (Morlan 2002)	2715 (2691, 2673, 2487, 2479, 2471) 2354 2707 (2357) 2347	hearth	At Provincial Museum 494 artifacts
39	Koliktalik 13	HdCg-53	Dorset (Early)	SC				Not at Provincial Museum 3 artifacts
40	Uiraluk Island 2	HdCg-50	Dorset (Early)	SC				Not at Provincial Museum 4 artifacts

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
41	Imilikuluk 1	HdCg-29	Dorset (Early?)	SC				Not at Provincial Museum 20 artifacts **NOT USED IN THIS STUDY**
42	Youngs Harbour 3	HdCg-10	Dorset (Early)?	SC				Not at Provincial Museum 10 artifacts **NOT USED IN THIS STUDY**
43	Ford Harbour 4	HcCh-21	Dorset (Early and Middle)	SC, tested			possible sod house structure below Middle Dorset winter house; was faunal preservation	Not at Provincial Museum 26 artifacts
44	Mount Pickle Harbour 1	HcCh-17	Dorset (Early)	SC			cobbles and slabs interpreted as possible structure - no axial feature	At Provincial Museum 27 artifacts
45	Nukasusutok 12	HcCh-14	Dorset (Early and Middle)	SC, tested, excavated			1 Early Dorset axial feature and possibly 2 others; hearths 2	At Provincial Museum 140+ artifacts and flakes

	Site Name	Borden Number	Cultural Affiliation	Arch. Activity	Reported Dates B.P.	Calibrated Date Ranges and Averages - 1 Sigma B.P.	House Features	Collection Notes
46	Humbys Island 4	HcCf-04	Dorset (Early/Middle); Pre-Dorset	SC, tested, excavated				At Provincial Museum 10 Dorset artifacts and flakes **NOT USED IN THIS STUDY**
47	Humbys Island 1	HcCf-01	Dorset (Early/ Middle)	SC			axial sturcture	At Provincial Museum 20 artifacts **NOT USED IN THIS STUDY**
48	Multa Island 1	GkCb-1	Maritime Archaic; Dorset (Early/ Middle); Inuit	SC			several rocks in alignment (north-south); slab hearth area	Not at Provincial Museum 1 artifact and flakes **NOT USED IN THIS STUDY**
49	Napatalik North 4	GjCc-10	Dorset (Early)?	Surveyed only			Hearth	No Collections made **NOT USED IN THIS STUDY**

APPENDIX 5

DATES COMPARED TO A FIXED AGE AS A TEST FOR CONTEMPORANEITY

A) Given one radiocarbon date and a fixed age:

(1) 1400 B.P. +/- 100 and (2) 1200 B.P.

B) Is the difference between the radio carbon date and the fixed age a true difference, or can it be accounted for by statistical error?

C) Statistical Hypothesis:

$H_{0:}$ $\mu = 1200$ B.P.

$H_{1:}$ $\mu \neq 1200$ B.P.

D) Region of rejection: For a two tailed test at $\propto = 0.05$, and with infinite degrees of freedom, $t_{0.05} = 1.96$.

E) The Student's t ratio is calculated:

$t = (1400 - 1200) \div 100 = 2.00$

F) Since $t = 2.00 > t_{0.05} = 1.96$, Hypothesis$_0$ is rejected.

G) Thus it can be concluded that the difference between the radiocarbon date and the fixed age is significant, and that there is no potential for contemporaneity.

From Erwin
(1995:136)