SALMON NET (E1Ax-25): AN INVESTIGATION OF GROSWATER MATERIAL CULTURE STYLISTIC VARIABILITY IN NEWFOUNDLAND

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Abstract

This research examines the issue of Groswater material culture stylistic variability in Newfoundland. An excavation of the Salmon Net site, located on the east coast of the Northern Peninsula of Newfoundland outside the town of Conche, introduced the possibility that Groswater lithic assemblages could be stylistically mixed and/or more variable than researchers previously proposed. The excavation produced a Groswater lithic assemblage that included a mix of stylistically "typical" and "variant" material culture as well as a unique "Salmon Net-type" of endblade. Prior to this investigation Renouf (2005) first noticed and defined Groswater Palaeoeskimo stylistically variability exclusively as the difference between Phillip's Garden East, which generated a stylistically "typical" Groswater assemblage and Phillip's Garden West, which generated a stylistically "variant" Groswater assemblage.

Ten Groswater assemblages from Newfoundland were analyzed to determine whether a stylistically "mixed" assemblage like Salmon Net, or stylistically uniform assemblages like Phillip's Garden East or Phillip's Garden West (Renouf 2005), is characteristic of Newfoundland Groswater assemblages. The conclusion is that material culture stylistic variability is a defining feature of Newfoundland Groswater assemblages. Consequently, material culture stylistic variability must factor into our understanding of Groswater society. Three possible explanations for material culture stylistic variability are discussed.

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Chapter 1

Introduction

The primary focus of this investigation is to examine stylistic variability in Groswater Palaeoeskimo material culture in Newfoundland. In this investigation the term "stylistic" refers to the differences in the measurement and appearance of attributes on a completed tool. Researchers have generally characterized Groswater lithic tool assemblages as stylistically similar throughout Newfoundland and Labrador, with the exception of the Phillip's Garden West collection, which has been identified as a Groswater lithic "variant" (Renouf 1994, 2005). Renouf (2005) classified the Phillip's Garden West assemblage as a Groswater "variant" because she demonstrated that although the tools had characteristic Groswater attributes, most were stylistically distinct in comparison to all other previously identified, henceforth referred to as "typical", Groswater tools and assemblages. Significantly, when Renouf published her findings in 2005, the Phillip's Garden West assemblage was an anomaly. No other stylistically unique Groswater assemblages had been identified in Newfoundland or Labrador, although, as Renouf explained, there were isolated "variant" artifacts found throughout Newfoundland (Renouf 2005).

Salmon Net is located outside the town of Conche on the east coast of the Northern Peninsula of Newfoundland (Figure 1.1). New evidence uncovered at the Salmon Net site in 2006 suggests that Phillip's Garden West is not the only stylistically non-"typical" Groswater assemblage in Newfoundland. The Salmon Net assemblage appears to include both stylistically "typical" and "variant" Groswater tools, as well as a

stylistically distinct endblade form. A stylistically mixed Salmon Net assemblage suggests that stylistic variability in Groswater Palaeoeskimo material culture is more widespread and diverse than researchers previously thought. If this is true, our understanding of Groswater culture as a whole will be affected. Therefore this issue warrants further investigation.

Figure 1.1: Location of Salmon Net (EfAx-25), inset.

Archaeologists have confirmed that Groswater Palaeoeskimos occupied the coast of Newfoundland and Labrador between 2800-1900 BP and 2900-2100 BP respectively, based on evidence of a similar and distinctive style of material culture (Auger 1985; Cox 1978, 2003; Fitzhugh 1972, 1976, 1980, 2002; Kennett 1991; Leblanc 1996, 2000; Loring and Cox 1986; Maxwell 1985; Ramsden and Tuck 2001; Renouf 1985, 1986, 1987, 1991, 1992, 1993, 1994, 2005). However, it is likely that in that amount of time (i.e. over 1000 years) and over such an expansive area (i.e. at least 31,340 km^2), there must be instances of behavioral diversity. Two researchers (Leblanc 1996; Renouf 2005) in particular have begun to explore the issue of Groswater regional and behavioral diversity. Leblanc (1996) explained that Groswater settlement-subsistence behavior varied in response to location and resource availability. Later Renouf (2005) identified a stylistically distinct form of Groswater material culture at the Phillip's Garden West site. These two investigations are particularly important to the current research for a couple of reasons. First, they inspired further investigation of the Salmon Net site, to explore whether there was evidence of Groswater behavioral diversity on the east coast of the Northern Peninsula of Newfoundland. Secondly, Leblanc (1996) and Renouf's (2005) analytical methods and conclusions have been influential to the formation and results of this analysis.

The Salmon Net (EfAx-25) site was excavated during the summer of 2006 to investigate Groswater Palaeoeskimo occupation of the east coast of the Northern Peninsula of Newfoundland. Salmon Net was first located by Bradley Drouin during a 2004 survey of the east coast of the Northern Peninsula of Newfoundland (Drouin 2004,

2005). Prior to Drouin's survey, there had not been a Groswater site identified on the east coast of the Northern Peninsula. Thus this research fills an existing geographical gap in our knowledge of Groswater occupation of Newfoundland. A research plan was developed prior to the excavation, which included comparing the results of my research with other Groswater sites in Newfoundland, particularly those on the west coast of the Northern Peninsula. The objective was to determine how evidence of Groswater occupation on the east coast of the Northern Peninsula of Newfoundland added to or changed our understanding of Groswater occupation of Newfoundland in general. Three research questions were developed prior to the excavation of Salmon Net as a way to better appreciate the site's cultural material and its general makeup. These were: (1) What characterizes the lithic material culture at Salmon Net? (2) What is the function of Salmon Net? (3) What is the chronology of Salmon Net? These questions are answered in Chapter 3. The results of the excavation were surprising. In brief, there appeared to be a mix of "typical" and Phillip's Garden West "variant" lithic material culture at the site, as well as a stylistically distinct form of Groswater endblade. Since the Salmon Net assemblage could not necessarily be characterized as "typical" or "variant" like other Groswater assemblages, a material culture assessment and comparison with other Groswater sites, particularly in Newfoundland, became even more significant.

Seven[1] Groswater sites from Newfoundland were chosen for analysis along with the Salmon Net site to explore the issue of Groswater material culture diversity. The Newfoundland Groswater sites are: Cow Head (DlBk-1) and Factory Cove (DlBk-3) at Cow Head; Phillip's Garden West (EeBi-11), Phillip's Garden East (EeBi-1) and the Party site (EeBi-30) at Port au Choix; Peat Garden (EgBf-6) at Bird Cove; and Cow Cove (EaBa-14) at Coachman's Cove (Figure 1.2). These sites were chosen in particular because of their proximity to the Salmon Net site; they are all located on or very near the Northern Peninsula of Newfoundland, as well as the fact that they are the most comprehensively excavated and researched Groswater sites on the Island. These eight sites (including Salmon Net) and their assemblages[2] are described in Chapter 4.

Six formal tool types from the Salmon Net collection are compared to those same six tool types from the seven Groswater sites mentioned above to better understand the Salmon Net collection, and how it corresponds with or changes our understanding of Groswater Palaeoeskimo material culture stylistic variability, particularly in Newfoundland. Only six types of Groswater tools are considered from each assemblage because those six in particular display characteristic Groswater attributes that are conducive to a comparative analysis. The six tool types are endblades, bifaces, sideblades, burin-like tools, endscrapers and sidescrapers. There are measurable stylistic

[1] Originally eight Groswater sites, seven from Newfoundland and one from Labrador, were chosen for analysis along with the Salmon Net site to explore the issue of Groswater material culture diversity. The Postville Pentecostal site (GfBw-4) in Postville, Labrador was originally included in this analysis in order to relate Groswater material culture from Newfoundland to that from Labrador. However, I do not have access to the original Postville collection, and consequently was unable to make a comparable or consistent comparison of the Postville data with all the other assemblages' data. Therefore the Postville data have been omitted from this comparative analysis. It is worth noting that in a preliminary qualitative comparison based on Loring and Cox 1986, the Postville collection could be characterized as stylistically "typical".

[2] There are actually 10 assemblages considered in this investigation because both Phillip's Garden West and Phillip's Garden East have two assemblages related to two different occupations/time periods.

differences between the "typical" and "variant" types of these six tools (Renouf 2005) which are described in the next chapter.

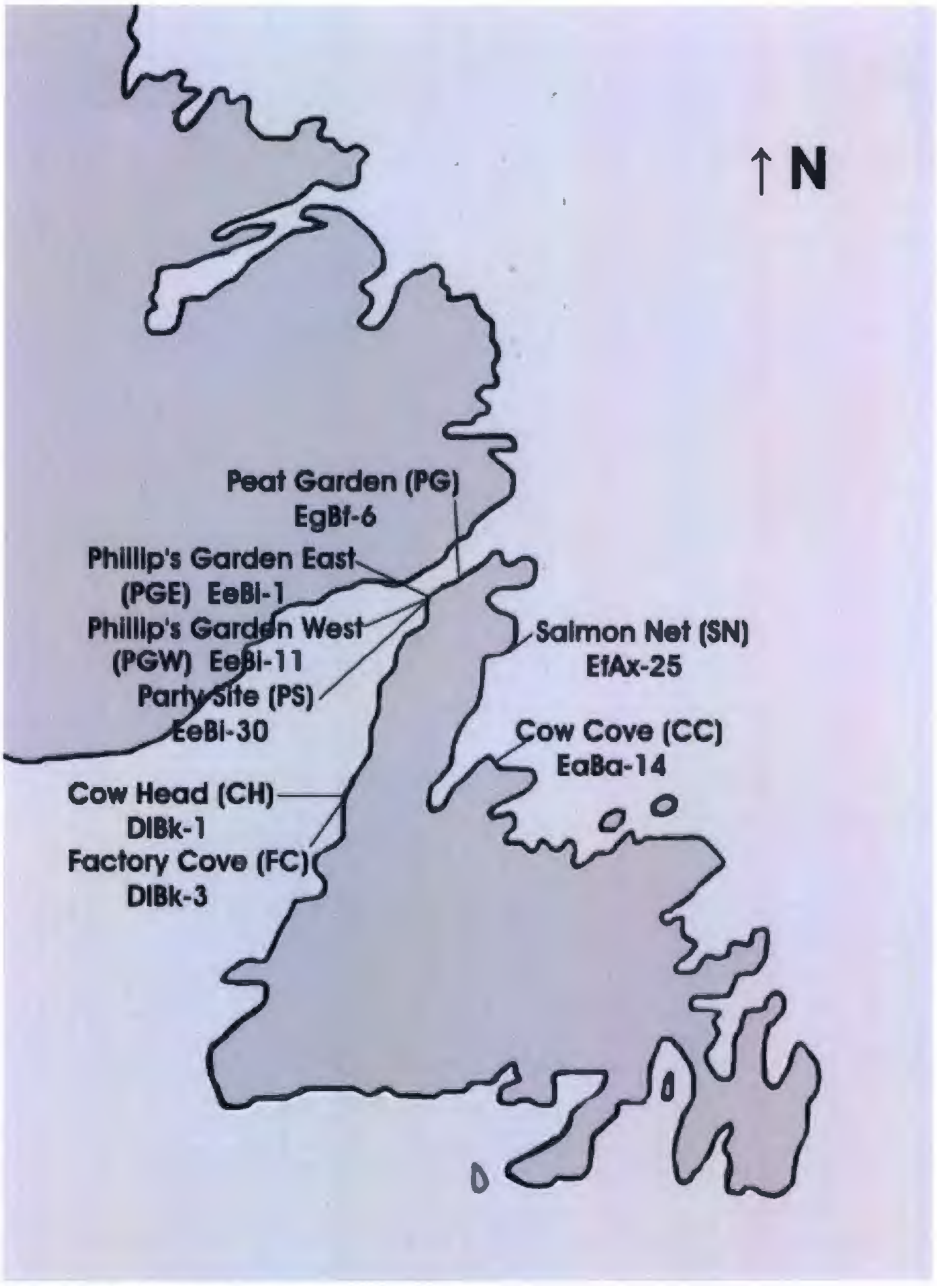


Figure 1.2: Groswater sites investigated.

Evidence of stylistic variability in Groswater material culture in Newfoundland is a significant discovery because it indicates behavioral diversity over time and/or place.

Researchers do not all agree on how to interpret 'style' in the archaeological record and thus they do not all agree on how to interpret behavior from style. Therefore Chapter 6 includes a discussion of some of the issues related to interpreting style as well as one on possible cultural implications of material culture diversity in Newfoundland Groswater assemblages. Three possible explanations for Groswater material culture diversity are explored: that socio-cultural factors affected Groswater material culture stylistic variability, that Groswater material culture is stylistically variable for a functional reason, or that Groswater material changed over time.

This thesis is composed of seven chapters. The following Chapter 2 provides background information, including a discussion of previous research relevant to this investigation and a description of Groswater material culture. Chapter 3 focuses on the Salmon Net site and excavation, since it produced the stylistically mixed assemblage that initiated this investigation. Chapter 4 offers a summarized description of the 10 assemblages analyzed in this investigation. Chapter 5 includes the primary data analysis; qualitative and/or quantitative attributes of six categories of tools from each of the 10 Groswater assemblages are compared to determine whether Groswater material culture among the 10 assemblages is stylistically similar or diverse. The data from Chapter 5, for each assemblage, is combined in Chapter 6 to determine each assemblage's stylistic association ("typical", "variant" or "mixed"). Chapter 6 also includes a discussion of the debate over how to interpret 'style' in the archaeological record and what might account for the occurrence of stylistic variability in Groswater material culture. Finally, Chapter 7 is a summary of the results of this thesis and includes concluding remarks.

Chapter 2

Groswater Palaeoeskimos and the History of Research

Introduction

This chapter focuses on how our definition of Groswater material culture has developed and what our current understanding of Groswater material culture is, providing a culture-historical context for this research project.

This chapter begins with a short history of the identification of Groswater artifacts as a separate category of Palaeoeskimo material culture. Groswater Palaeoeskimo material culture was first identified and defined by William Fitzhugh in the late 1960s, based on stylistically unique set of artifacts he discovered in Groswater Bay, Labrador (Fitzhugh 1972). At first Fitzhugh considered Groswater Palaeoeskimos as belonging to the Dorset culture, however, further investigations (Kennett 1991; Leblanc 1996; Renouf 2005; Tuck and Fitzhugh 1986) subsequently led to the identification of Groswater Palaeoeskimos as a distinct cultural group. This distinction is based on similarities in Newfoundland and Labrador in Groswater technology production, site features, and settlement and subsistence patterns, which differ fundamentally from the Dorset culture (Kennett 1991; Leblanc 1996; Renouf 2005; Tuck and Fitzhugh 1986).

The second half of this chapter describes our current understanding of Groswater material culture. Until recently, archaeologists believed that there was one stylistically distinct and uniform set of Groswater material culture (Auger 1985; Cox 1978; Kennett 1991; Loring and Cox 1986; Renouf 1994; Tuck 1987). Then Renouf (2005) published a study in which she classified two stylistically distinct forms of Groswater material

culture: "typical" as well as "variant". Renouf made this distinction because the Groswater assemblage she discovered at Phillip's Garden West, a Groswater site at Port au Choix, was stylistically distinct in comparison to every other Groswater site and collection previously identified. Since the Phillip's Garden West assemblage was stylistically unique, Renouf referred to the Phillip's Garden West-type material as "variant" and all other Groswater material as "typical". Renouf quantitatively demonstrated the difference between "typical" and "variant" Groswater material culture by comparing stylistic attributes from "typical" Groswater tools, represented by the Phillip's Garden East assemblage, and "variant" Groswater tools, represented in the Phillip's Garden West assemblage. Stylistic attributes from six Groswater tool types; endblades, bifaces, burin-like tools, sideblades, endscrapers and sidescrapers, were taken into consideration for Renouf's (2005) investigation. These six tool types are considered throughout this investigation because they show up most frequently in Groswater assemblages and because they have attributes that can be attributed to Groswater Paleoeskimos (Auger 1985; Leblanc 1996; Loring and Cox 1986; Renouf 1994, 2005). A discussion of Renouf's investigation, as well as a description of both "typical" and "variant" Groswater tools are included in this chapter because this project incorporates as well as expands on these topics.

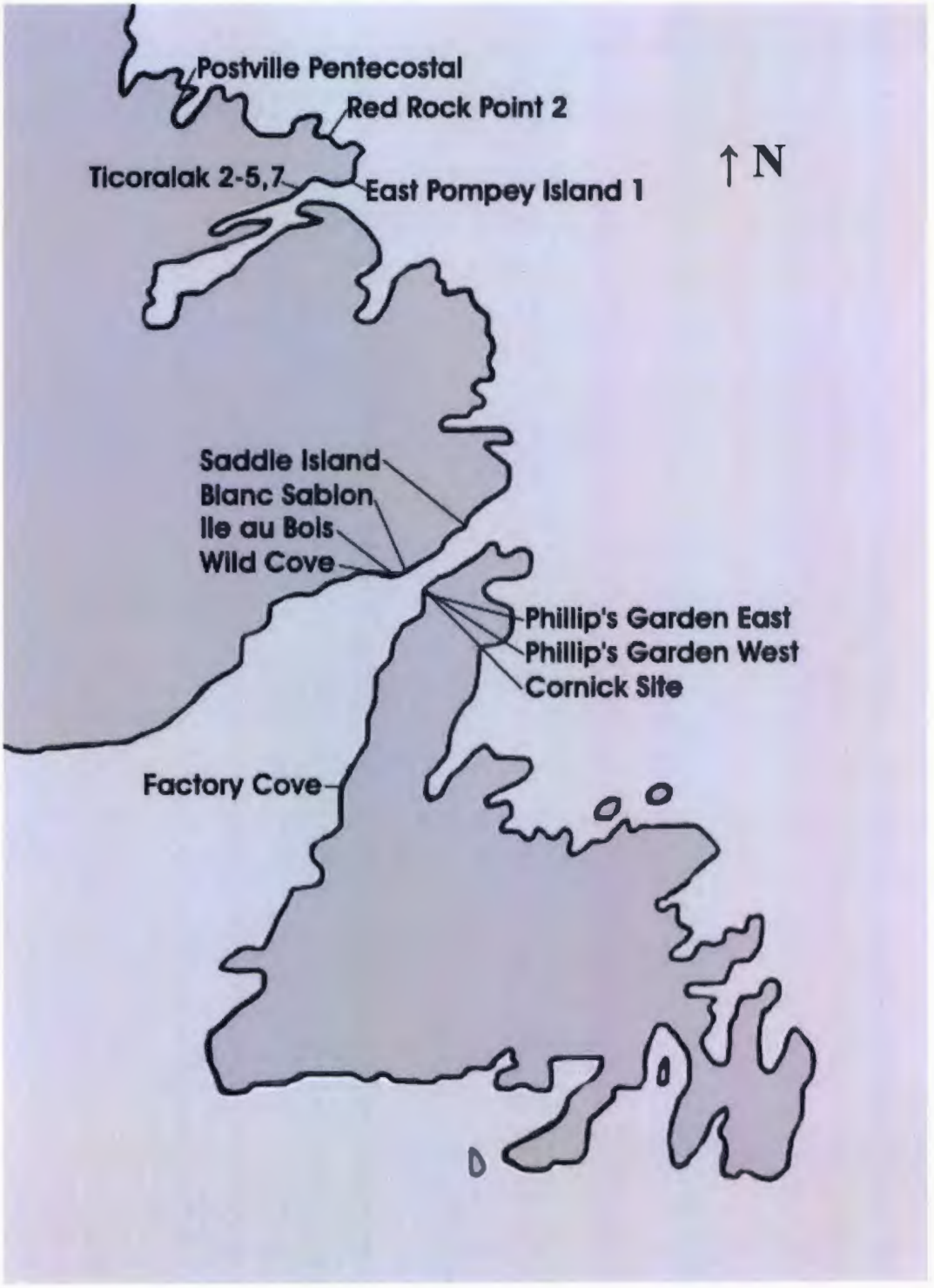


Figure 2.1: Groswater sites mentioned in Chapter 2.

Introducing Groswater Palaeoeskimo Material Culture

Groswater Palaeoeskimo material culture was originally identified at seven sites [East Pompey Island 1 (GcBi-12), Ticoralak 2-5, 7 (GbBn-2, 3, 4, 5, 7) and Red Rock Point 2 (GeBk-2)] located at the mouth of Groswater Bay, Labrador (Figure 2.1) (Fitzhugh 1972:126). Fitzhugh (1972) characterized the material he found at these sites as a separate category of Palaeoeskimos material culture because it was stylistically and technologically different from other Palaeoeskimo groups. For instance, he noted that Groswater people did not "tip-flute"[1] their endblades, as the Dorset did (Fitzhugh 1972: 126). Furthermore, Groswater people tended to make chipped stone tools from flakes as opposed to making tools from a core (Fitzhugh 1972: 148). Finally, Fitzhugh (1972) also noticed that Groswater tools were stylistically distinct from their Palaeoeskimo counterparts. He took particular note of the endblades, which were box-based, side-notched and plano-convex. He also found corner-notched, asymmetric leaf-shaped bifacial knives; single, side-notched bifacial knives; bifacial side blades; endscrapers with graving spurs (also called flared or eared); chipped and ground gravers, or burin-like tools; utilized graver spalls; microblades, some of which were notched and some of which were stemmed; a few examples of ground slate endscrapers and adze fragments; and finally, utilized flakes, thought mostly to be scrapers (Fitzhugh 1972: 103, 148-149).

Even though Fitzhugh recognized that Groswater Palaeoeskimo material culture was technologically and stylistically distinctive in comparison to that of other Palaeoeskimo groups, he did not yet acknowledge that it reflected a distinct cultural

[1] "Tip-fluting" refers to the method of sharpening the tip of an endblade by pressure-flaking the apex of a blank or preform (Plumet and Label 1997).

group. Fitzhugh originally referred to the culture as the Groswater Dorset Phase (Fitzhugh 1972: 126) because the sites and assemblages that contained the new material culture were originally discovered in Groswater Bay, Labrador. He thought it signified a regional variant of the widespread Dorset culture (Fitzhugh 1972: 126). Fitzhugh believed Groswater Palaeoeskimos were a regional variant of Dorset Palaeoeskimos based on the fact that both Dorset and Groswater tool assemblages originated from the Arctic Small Tool Tradition (Fitzhugh 1972: 126). Belonging to the Arctic Small Tool Tradition refers to a group's technological approach; it involves the production of microblades, bifaces and ground-stone tools (Fitzhugh 1972: 126). Fitzhugh also associated Groswater Palaeoeskimos with Dorset Palaeoeskimos because the Groswater sites he found in Labrador in 1972 were near or in a similar environmental context as Dorset sites (Fitzhugh 1972: 102). Furthermore, Groswater Palaeoeskimos appeared to use the same type of raw material as Dorset people, namely "fine-grained green-brown-tan mottled chert" (Fitzhugh 1972: 126). Fitzhugh also found evidence of similar structural remains, such as food cache pits created on a boulder beaches, at both Groswater and Dorset sites in Groswater Bay (Fitzhugh 1972: 102). Finally, Fitzhugh also recognized that Groswater and Dorset Palaeoeskimos were chronologically related; Groswater assemblages at East Pompey Island 1, Ticoralak 2-5, 7 and Red Rock Point 2 were dated to 800-200 BC or 2750-2150 BP, which falls between the Pre-Dorset and Dorset Palaeoeskimo occupations of Newfoundland and Labrador (Fitzhugh 1972: 126).

A Maturing Understanding of Groswater Palaeoeskimos

Our understanding of Groswater Palaeoeskimo socio-economic characteristics has evolved and expanded over time, as archaeological research has continued and Groswater sites and material culture have been identified elsewhere in Labrador, Newfoundland and the Quebec Lower North Shore (Auger 1985, 1986; Bishop 1974; Cox 1978, 2003; Hartery and Rast 2001, 2002; Kennett 1991; Lavers 2006; Leblanc 1996; Loring and Cox 1986; Pintal 1994; Renouf 1984, 1985, 1987, 1991, 1992, 1993, 1994; Wells 2002; Wheatley 2004). Loring and Cox's (1986) excavation of the Postville Pentecostal site in Labrador in 1977 was the first major Groswater investigation. Prior to this excavation archaeologists had only been finding small Groswater collections (i.e. less than 100 artifacts per site) (Leblanc 1996). In contrast, the Postville investigation yielded about 2000 artifacts as well as the first identified Groswater structural remains (Loring and Cox 1986). Following the Postville excavation, some major research took place in western Newfoundland at the Factory Cove (Auger 1985) and Phillip's Garden East and Phillip's Garden West sites (Renouf 1984, 1985, 1987, 1991, 1992, 1993, 1994). These three sites were particularly significant because they were larger than Postville, yielded faunal material and added to our database of Groswater structure types (Leblanc 1996; Renouf 2003). Archaeologists began to recognize, from the data at these sites, as well as from related Groswater research investigations, that there were fewer similarities between Groswater and Dorset Palaeoeskimos than they originally supposed. Essentially, researchers found that Groswater technology, site features, and settlement and subsistence patterns in Newfoundland, Labrador and Quebec Lower North Shore differed

fundamentally from the Dorset (Kennett 1991; Leblanc 1996; Renouf 1994, 2005; Tuck 1987; Tuck and Fitzhugh 1986). In turn, they began to characterize Groswater Palaeoeskimos as a distinct cultural group (Kennett 1991; Leblanc 1996; Renouf 1994, 2005; Tuck 1987; Tuck and Fitzhugh 1986).

Groswater Palaeoeskimos have been characterized as a separate Palaeoeskimo group in large part because of their stylistically unique material culture, which has typically been recognized as similar throughout Newfoundland and Labrador (Renouf 1994, 2005; Tuck 1987). A typical Groswater tool set includes: box-based, side-notched endblades; a variety of thin, often asymmetrical, corner-notched bifaces; chipped and ground burin-like tools; circular, ovate and triangular sideblades; rectangular 'eared' and triangular scrapers; concave side-scrapers; and microblades (Fitzhugh 1980; Leblanc 1996; Renouf 1994, 2005; Tuck 1987).

The Groswater toolset is stylistically distinct from Dorset lithic tool assemblages for a number of reasons. Most of these tools were produced from a flake, as opposed to Dorset technology, which are typically produced via core reduction (Renouf pers. comm.; Fitzhugh 1972). In addition, certain Groswater tools exhibit stylistically unique attributes, like box-bases and side-notches on endblades, asymmetric bifaces, and ears on the scrapers (Fitzhugh 1972; Tuck 1987). Groswater tools are usually made from colourful fine-grained cherts collected in and around the Cow Head chert beds on the west coast of the Northern Peninsula of Newfoundland (Leblanc 1996; Wheatley 2004). These cherts are typically described as "high quality" and come in an assortment of colours (i.e. white, black, grey, beige, blue-greens, red, brown, mustard) and patterns (i.e.

spotted, lines or swirls) (Leblanc 1996: 6; Wheatley 2004: 12). Some Groswater sites also yield artifacts made of Ramah chert, quartz crystal, slate and/or soapstone (Auger 1985; Leblanc 1996; Wheatley 2004), but the amounts are far less than in Dorset assemblages (Fitzhugh 1972; Tuck 1987).

Groswater archaeological sites are also distinctive in comparison to Dorset sites because of their size and the type of structural evidence they typically yield. As Renouf (2003, 2005) explained, Dorset sites tend to be large and typically contain architectural features that suggest they were "large semi-permanent central places" (Renouf 2005: 58); whereas Groswater sites tend to be small and their lack of structural evidence suggests they were highly mobile. Groswater sites from both Newfoundland and Labrador have yielded structural information; however they tend to yield relatively little, and the evidence that they have turned up tends to be inconsistent, especially between Newfoundland and Labrador sites (Renouf 2003). In Labrador, structures are characteristically oval and include typical Palaeoeskimo axial features and box hearths (Renouf 2003). The axial features are either made of cobbles, cobbles and slabs or upright rocks, and a couple have lamp stands (Cox 2003; Fitzhugh 1976; Loring 1983; Loring and Cox 1086; Renouf 2003). Most structures also have slab pavements which define their shape (Loring 1983; Loring and Cox 1986; Renouf 2003). Groswater structural evidence from Newfoundland is not as consistent as it is within Labrador. Researchers have found oval, rectangular, and bilobate shaped structures (Auger 1985; Erwin 2000, 2003; Reader 1997; Renouf 1994, 2003). There has been one identified box hearth (Erwin 2000, 2003) but no axial features or slab pavements. Rather than slab

pavements researchers have defined structural perimeters by rocks, discard material, a ring of postholes and humus and sand (Auger 1985; Erwin 2000, 2003; Reader 1997, 1998; Renouf 1991, 1992, 1993, 1994, 2002, 2003).

Our understanding of Groswater subsistence-settlement systems has evolved over time, with continued research. Prior to the availability of a Groswater faunal record, Fitzhugh (1972) and Loring and Cox (1986) developed subsistence-settlement models based on site location, resource availability and a comparison with other Palaeoeskimo subsistence-settlement systems. When Fitzhugh (1972: 150) first attempted to describe Groswater people's subsistence-settlement pattern, he assumed it was similar to Dorset Palaeoeskimos' since he believed they were closely related groups. Thus, he designated Groswater subsistence-settlement system as Modified-Maritime, which meant they inhabited the coast and subsisted primarily on marine resources. Fitzhugh's determination that Groswater practiced Modified-Maritime subsistence-settlement was based on an interpretation of seven Groswater sites from Groswater Bay (Fitzhugh 1972: 147-151). Although these sites were located on the coast, thus implying coastal settlement, they did not contain a great deal of diagnostic data, such as faunal remains and there were few formal tools that could be used to interpret subsistence behaviour. Thus he compared them to Dorset sites and settlement-subsistence systems, which were at the time better understood, and inferred a reliance on marine resources (Fitzhugh 1972: 149). Archaeologists accepted Fitzhugh's suggestion for a time, though their opinions began to change when they started to question the link between Groswater and Dorset,

and when inner bay sites were discovered, which suggested inner bay resource exploitation (Auger 1985; Cox 1978; Loring and Cox 1986).

Cox (1978) first proposed that Groswater inhabited inner bays during the winter to exploit caribou and other interior resources and then switched to the coast during the summer to exploit marine resources, much like the Pre-Dorset (Kennett 1991). His hypothesis was supported by the excavation of the Postville Pentecostal site at Kaipokok Bay in central Labrador (Loring and Cox 1986). Postville is an inner bay site which Loring and Cox (1986) argued implied that Groswater hunted caribou as well as other inner bay resources. They suggested that Groswater concentrated on inner bay resource exploitation in the winter and marine animals during the rest of the year, though they still stayed in the inner bay to do this (Leblanc 1996; Loring and Cox 1986). As Leblanc (1996) explains, the inner bay/inner island settlement scenario became the accepted model of Groswater settlement-subsistence by Arctic researchers. However, as Leblanc (1996) also points out, Loring and Cox (1986; Cox 1978) based their model on site location and resource availability as opposed to formal data such as faunal evidence.

Groswater faunal data has been uncovered in Newfoundland and the Quebec Lower North Shore sites since Fitzhugh (1972) and Loring and Cox (1986) presented their settlement-subsistence models, which means researchers have been able to present more accurate, substantiated hypotheses with regard to Groswater subsistence-settlement systems (Auger 1985; Kennett 1991; Leblanc 1996; Renouf 1994; Pintal 1994; Wells 2002). Auger (1985) found about 600 specimens at Factory Cove, which included mammals (i.e. Arctic hare, beaver, red fox, harbour seal, harp seal, seal and caribou),

birds (i.e. Canada goose, common eider, eider, murre, duck and other unidentifiable birds) and fish (i.e. cod) (Auger 1985: 126). He found predominantly seal which led him to characterize Groswater subsistence-settlement at Factory Cove as modified-maritime, according to Fitzhugh's (1972) classification scheme. However Auger also recognized that Factory Cove differed from Fitzhugh's classic definition because there were caribou remains and he figured that Groswater people were also exploiting interior resources. Renouf (1994) describes finding tens of thousands of bone specimens at the Phillip's Garden East and Phillip's Garden West sites, predominantly seal (i.e. more than 90%). From this she conjectured that Phillip's Garden East and Phillip's Garden West were seasonally specialized sites (Renouf 1994). Pintal (1994) interpreted Groswater subsistence-settlement in the Quebec Lower North Shore as people seasonally exploiting coastal resources.

Leblanc (1996) also investigated Groswater settlement-subsistence, but unlike most of the research mentioned above, she investigated the issue on a broader spectrum, incorporating multiple sites and information from the Gulf of St. Lawrence region to try and identify whether or not there was an overarching Groswater settlement-subsistence pattern. What she found was that Groswater settlement-subsistence behaviour was diverse and regionalized. Leblanc (1996) came to this conclusion by first proposing a predictive model of Groswater mobility and settlement-subsistence behaviour, based on available raw lithic material and food resources. According to Leblanc's model (1996; 2000) Groswater people would have stayed the longest at, and most often returned to, locations with predictable resources. Thus, harp seal migrations and chert deposits

affected where, when and how long Groswater people resided at a particular site. She then tested this model against the archaeological record, which included data from seven sites in the Gulf of St. Lawrence region: Wild Cove (EiBj-4), Ile au Bois (EiBg-29), Blanc Sablon (EiBg-43A) and Saddle Island (EkBc-1) on the West coast of the Strait of Belle Isle, and Phillip's Garden East (EeBi-1), Cornick (EeBi-29) and Factory Cove (DlBk-3) on the West Coast of the Northern Peninsula of Newfoundland (Figure 2.1). Her analysis was based on raw material distribution, stages of lithic reduction apparent at each site (via debitage analysis), different tool types and site structure. Essentially Leblanc found that the data supported her predictive mobility model that Groswater mobility and foraging patterns were affected by resource availability.

Leblanc (1996) hypothesized and then observed in the archaeological record that Groswater people practiced both opportunistic and logistical foraging strategies in the Gulf of St. Lawrence region. Opportunistic foraging occurred when people were not able to predict where their prey was necessarily going to show up, and so they would have to move around often to find their targeted resource. Since opportunistic foragers were constantly moving and hunting, their sites would inevitably be small, numerous and spread along the coast. Furthermore, opportunistic foragers would likely carry ready-made tools with them to take advantage of hunting opportunities whenever they arose. Leblanc predicted and also observed in the archaeological record that Groswater sites on the west coast of the Strait of Belle Isle, namely Wild Cove, Ile au Bois, Blanc Sablon and Saddle Island (Figure 2.1), would reveal evidence of opportunistic foraging. Leblanc predicted this type of behaviour because seals are available for a longer period of time on

the Labrador side of the Strait of Belle Isle (as opposed to the Newfoundland side), but there are no really predictable hunting spots. According to Leblanc, her archaeological analysis of the Quebec/Labrador sites yielded a number of small assemblages spread along the coast with primarily finished artifacts, which suggests that people were moving around looking for prey, ready to hunt whenever they had the chance (Leblanc 1996).

Groswater people also sought resources logistically (Leblanc 1996). Logistical foraging involved planned resource acquisition, as opposed to opportunistic foraging where people relied on encounter-based resource acquisition. Essentially, the idea of logistical foraging is that if people knew when and where a resource was going to turn up, they would return to that location to take advantage of the reliable hunting opportunity (Binford 1979, 1980). Sites resulting from this type of behaviour would likely demonstrate repeated periods of occupation as well as planned site use. Therefore, archaeologically one would expect to find larger assemblages at logistical sites than opportunistic sites. Furthermore, one might expect to find evidence of the final stages of tool production; the idea is that logistical hunters would have time to plan and prepare for the hunt since they knew when and where it was going to take place, as opposed to opportunistic foragers who had to be constantly prepared. Seal availability on the west coast of Newfoundland is, and would have been, more predictable than in Quebec/Labrador. Thus, Leblanc predicted that she would find evidence of settlement aggregation on the west coast of Newfoundland, and she did. According to Leblanc (1996), evidence showed that Phillip's Garden East and the Cornick site at Port au Choix were reoccupied over time, for short periods. Furthermore, Leblanc explains that the

Groswater collections at Phillip's Garden East and Cornick were composed of a large amount of pre-formed hunting tools. From that information she interpreted that Groswater people anticipated and planned for the seal hunt in and around Port au Choix year after year.

Leblanc (1996) identified evidence of both opportunistic and logistical foraging at the Factory Cove site, which is located at Cow Head on the west coast of the Northern Peninsula of Newfoundland. Cow Head is the main source for lithic raw materials in Newfoundland, so Leblanc predicted that she would find substantial evidence of people exploiting lithics at the Factory Cove site, and she did (Leblanc 1996). Leblanc also explained that seals and caribou occasionally frequent the area, so she predicted that people would have practiced opportunistic hunting when they were at Factory Cove to gather lithic raw material. According to the faunal record, opportunistic seal, caribou and bird hunting did occur while people resided at the site to exploit the lithic source.

Leblanc's (1996) investigation demonstrated that Groswater people's behaviour and socio-economic pursuits varied over time and in different regions of Newfoundland and Labrador. As she explained, one of the primary goals of her research was "to study individual sites within their regional contexts to define locally distinctive subsistence-settlement patterns rather than trying to characterize Groswater in terms of one very general pattern or adaptation type" (1996: 17). In other words Leblanc recognized that Groswater people did not act in a uniform way no matter where they were and therefore she could not and did not come up with one over-arching definition of behaviour. Renouf

(2005) came to a similar realization when she identified and defined a stylistically unique Groswater assemblage at Phillip's Garden West in Port au Choix.

Phillip's Garden West, A "Variant" Groswater Assemblage

In 2005 Renouf identified a Groswater lithic "variant" at Phillip's Garden West. This study is particularly pertinent to this research investigation because both deal with the issue of Groswater material culture diversity. Furthermore, the research methods in this investigation are modeled after Renouf's analytical approach.

It is important to re-emphasize that prior to Renouf's investigation there was only one "type" of Groswater material culture, recognized as stylistically similar throughout Newfoundland and Labrador (Renouf 1994, 2005; Tuck 1987). This type of Groswater material culture is now referred to as "typical", since Renouf introduced a stylistically exceptional or "atypical" comparative collection from Phillip's Garden West (Renouf 2005). Our definition of "typical" Groswater material culture is based primarily on the assemblages found at Postville Pentecostal in Labrador, and Factory Cove and Phillip's Garden East in Newfoundland (Auger 1985, 1986; Loring and Cox 1986; Renouf 1994, 2005). These three sites have shaped our understanding of "typical" Groswater material culture because they contain the largest Groswater collections to date. Furthermore, many similar tool types were found at all three sites, and of those tool types, most of the tools are stylistically similar. The following discussion provides greater detail on what a "typical" Groswater assemblage, summarized above, may include (Auger 1985, 1986; Cox 1978; Lavers 2006; Loring and Cox 1986; Renouf 1994, 2005):

Endblade: A typical Groswater endblade is symmetrical, box-based, has relatively broad side-notches, a plano-convex cross-section and a straight, unifacially-beveled base. Researchers also find examples of un-notched endblades, which can be split into two categories; some are triangular, have a concave base and bi-convex cross-section, while others are lanceolate, straight-based and look like "preformed" (i.e. just missing the notches) box-based endblades. Box-based endblades are the most abundant endblade form in most Groswater collections. They are also the most diagnostic tool type of Groswater Palaeoeskimos.

Figure 2.2: Typical Groswater endblades.

Biface: Groswater bifaces occur in various sizes and shapes, they can be side-notched, corner-notched or stemmed. Two attributes that all Groswater bifaces have in common are their asymmetry (often described as leaf-shaped) and thin cross-section.

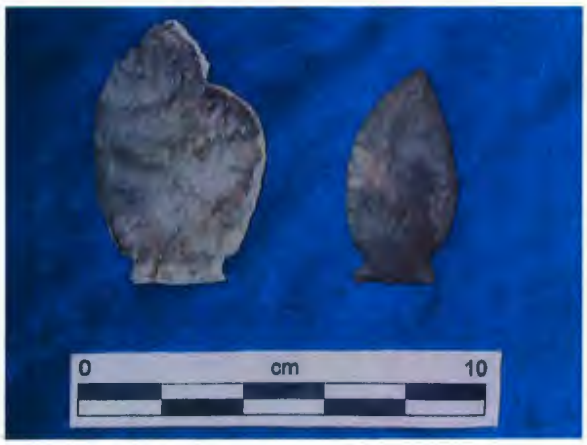


Figure 2.3: Typical Groswater bifaces.

Burin-like Tool: Typical Groswater burin-like tools (also referred to as pseudo-burin or graver) (Auger 1985) are both chipped and ground (often on both sides as well as the lateral edges), asymmetrical, have side-notches and can be either rectangular or trapezoidal.

Figure 2.4: Typical Groswater burin-like tools.

Sideblade: Groswater sideblades are circular, ovate or triangular. They are typically thin, coarsely flaked and occasionally ground.

Figure 2.5: Typical Groswater sideblades.

Endscraper: A characteristic Groswater endscraper is rectangular and "eared" at the distal end. However, most Groswater collections also contain a number of triangular, un-eared endscrapers.

Figure 2.6: Typical Groswater endscrapers, "eared" examples to the left and right.

Sidescraper: Groswater sidescrapers are usually made out of a burin-like tool; thus it is shaped similarly, and it is chipped and ground, asymmetrical, and has side-notches. However, the difference between a burin-like tool and a typical Groswater sidescraper is that one of the lateral edges (the working edge) on a sidescraper is steeply flaked and concave.

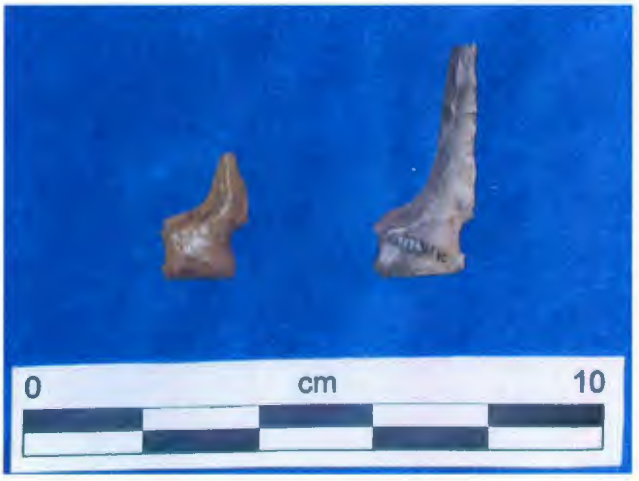


Figure 2.7: Typical Groswater sidescrapers.

Renouf (2005) defined the Phillip's Garden West assemblage as a Groswater lithic "variant" because it contained all the above-mentioned tool types, with many characteristic Groswater attributes, and therefore *is* a Groswater assemblage; however, there were stylistic differences between "typical" tools and those from Phillip's Garden West. For example, she noted that Phillip's Garden West endblades were elongated and more often serrated, some of the sideblades (as well as endblades) were smaller than normal, some of the artifact classes (i.e. scrapers, sideblades and burin-like tools) exhibited different shapes, and the cherts seemed to be particularly colourful (Renouf 2005: 68). Renouf (2005) verified that the Phillip's Garden West assemblage is a

stylistically "variant" Groswater assemblage by quantitatively and qualitatively comparing select stylistic attributes on endblades, bifaces, sideblades, burin-like tools, scrapers and sidescrapers, between the Phillip's Garden East and Phillip's Garden West assemblages. Renouf chose to compare Phillip's Garden West with Phillip's Garden East because of the sites' proximity to one another, and because the Phillip's Garden East assemblage is a large and representative sample of "typical" Groswater artifacts. "Variant" Groswater tools can be described as follows:

Endblade: A "variant" Groswater endblade is longer and thinner than a "typical" Groswater endblade. Most are partially ground on one or two faces and many are serrated. "Variant" endblades are symmetrical, box-based and side-notched, but their side-notches are narrower than "typical" Groswater endblades and their bases are bifacially thinned, concave and often tanged (as opposed to a straight and unifacially-beveled base). Finally, a number of "variant" endblades have more than two notches and only a few are unnotched.

Figure 2.8: Phillip's Garden West "variant" Groswater endblades.

Biface: "Variant" bifaces are similar to "typical" bifaces since they come in various sizes and shapes. They are also typically asymmetrical and have a thin cross-section. The differences between "variant" bifaces and "typical" Groswater bifaces are that "variant" bifaces tend to have narrower side-notches and are more often partially surface ground and serrated at the edges.

Figure 2.9: Phillip's Garden West "variant" Groswater bifaces.

Burin-like Tool: "Variant" burin-like tools are both chipped and ground, like "typical" Groswater burin-like tools. However, "variant" burin-like tools have narrower side-notches and the blade tends to be triangular, as opposed to rectangular or trapezoidal.

Figure 2.10: Phillip's Garden West "variant" Groswater burin-like tools.

Sideblade: "Variant" sideblades are smaller, thinner and longer than "typical" Groswater sideblades. The predominate shape is semi-lunar, which means one lateral edge is straight while the other is convex, as opposed to ovate. Finally, "variant" sideblades are more often serrated than "typical" Groswater sideblades.

Figure 2.11: Phillip's Garden West "variant" Groswater sideblades.

Endscraper: "Variant" endscrapers are typically triangular and have a pulled out distal edge, which forms an asymmetrical scraping edge.

Figure 2.12: Phillip's Garden West "variant" Groswater endscrapers.

Sidescraper: "Variant" sidescrapers are typically crescent-shaped, as opposed to "typical" sidescrapers which are made on burin-like tools, and they have a concave scraping edge.

Figure 2.13: Phillip's Garden West "variant" Groswater sidescrapers.

Both Leblanc (1996) and Renouf (2005) demonstrated how important it is to investigate Groswater Palaeoeskimo society at a regional scale. They were able to prove that Groswater people's behaviour varied over time and in different locations. The goal of my research at Salmon Net is to explore this issue further, by investigating Groswater occupation in a previously unexplored region of Newfoundland. My Salmon Net excavation was the first investigation of a Groswater site on the east coast of the Northern Peninsula of Newfoundland. The evidence from Salmon Net adds to and changes our understanding of Groswater society.

Chapter 3

The Salmon Net (EfAx-25) Excavation

Introduction

This chapter describes the 2006 field season at Salmon Net (EfAx-25) (see Figure 1.1), which included a seven-week, 38-m² excavation. The results of this excavation serve as the cornerstone of this thesis.

Excavation and Cataloguing Procedures

Excavation and cataloguing procedures followed Dr. M.A.P. Renouf's (1985:39-42, 1986:3-5, 1987:3) protocols. This included a plan excavation, which involved uncovering each natural soil horizon throughout the excavation and taking elevations at each level; dry-sifting all backdirt[1]; and taking soil samples for flotation (Renouf 1991, 1993). A total station was used to map the excavation and surrounding surface topography, to measure in all artifacts, and to take levels at each natural horizon of the excavation. Most of the artifacts were cleaned in the field and some were catalogued. Whatever lab work we did not complete in the field was subsequently completed in the Northern Peninsula Collections Room at Memorial University's Archaeology Unit.

2006 Program of Work at Salmon Net (EfAx-25)

2004 Archaeological Survey

Salmon Net (EfAx-25) was first identified by Bradley Drouin during a 2004 archaeological survey of Conche and Englee (Drouin 2004, 2005). During that field

[1] Water-sifting faunal material was not an issue because faunal material was not preserved at the Salmon Net site.

season 16 new prehistoric sites associated with different cultures were discovered, some of which included Groswater material. Salmon Net yielded particularly good evidence of Groswater Palaeoeskimos (Drouin 2005). In his description of Salmon Net Drouin (2005:21) explains that it is composed of "five distinct terraces which range in elevation from 10-20 m asl". It faces Conche Harbor and is bordered by 180° of water. The site is bounded by vertical cliffs except for a sloped area which allows for overland access to the site. Drouin excavated 34 test pits and found that twenty of them yielded cultural material which included several hundred flakes and six characteristic Groswater artifacts (Table 3.1, Figure 3.1). Drouin (2005: 22) explains that "the general stratigraphy is (1) 5-12 cm of loose light brown peat over (2) 12-20 cm of dark brown more compacted peat over (3) grey shale substrate." However, he found that in some test pits there was a 3-9 cm thick layer of grey/black dirt which contained charcoal and small rocks, in between layers 2 and 3 (Drouin 2005). Renouf (pers. com. 2006), who was at Salmon Net at the time, noted that this was similar to the cultural stratum at Phillip's Garden East. This suggested to her that the Salmon Net cultural occupation might be fairly substantial. Drouin did not notice any evidence of disturbance or features (Drouin 2005).

The six artifacts Drouin found were undoubtedly Groswater; however the bifaces (Figure 3.1, c and d) and sideblade (Figure 3.1, f) were somewhat unusual. They were more similar to the Phillip's Garden West "variant" (Renouf 2005) material than "typical" Groswater material, in that they had narrower side-notching (bifaces) and a different shape (sideblade). Essentially Drouin's data indicated that Salmon Net had the potential to contribute our understanding of Groswater material culture.

TP 1-1 EfAx-25:8 flake (1)	**TP 1-2** EfAx-25:7 flakes (3) EfAx-25:36 grinding stone	**TP 1-3** EfAx-25:27 core fragment
TP 2-1 EfAx-25:11 flakes (11)	**TP 2-2** EfAx-25:5 flakes (18) EfAx-25:29 core fragment	**TP 2-3** EfAx-25:1 flakes (22) EfAx-25:24 bifacially worked tool EfAx-25:28 biface
TP 2-4 EfAx-25:10 flakes (10) EfAx-25:30 possible side blade	**TP 3-1** EfAx-25:4 flakes (4)	**TP 3-2** EfAx-25:2 flakes (2) EfAx-25:23 projectile point
TP 4-1 EfAx-25:19 flakes (43) EfAx-25:22 endblade EfAx-25:33 flake (1)	**TP 4-2** EfAx-25:6 flakes (23) EfAx-25:31 projectile point EfAx-25:37 burnt fat EfAx-25:38a-f fire cracked rock	**TP 4-3** EfAx-25:20 endblade EfAx-25:32 flakes (2)
TP 4-4 EfAx-25:3 flakes (2) EfAx-25:21 microblade	**TP 4-6** EfAx-25:9 flakes (6)	**TP 5-2** EfAx-25:16 grinding stone EfAx-25:17 endscraper EfAx-25:18 flake (1)
TP 6-1 EfAx-25:14 flakes (43)	**TP 6-2** EfAx-25:34 flakes (15)	**TP 7-3** EfAx-25:12 flakes (3)
TP 7-5 EfAx-25:15 flakes (3)	**TP 7-6** EfAx-25:35 flakes (4)	**TP 7-7** EfAx25:13 flakes (17)
TP ? EfAx-25:26 projectile point	**TP ?** EfAx-25:25 flake (1)	

Table 3.1: Drouin's (2005: 23) test-pit finds from Salmon Net (EfAx-25).

Figure 3.1: Artifacts from Drouin's 2004 survey.

Objectives of the 2006 Field Season

Our strategy for the 2006 field season was to open a small excavation nearby some of Drouin's test pits that had yielded diagnostic cultural material, such as artifacts and/or charcoal samples, in order to collect more data about the site. We identified a potential area to begin excavations prior to the field season based on Drouin's findings (Figure 3.2) (Drouin 2005); however, we kept an open mind about where to start digging until we saw the site first-hand (Figures 3.3 and 3.4).[2] We did not determine a specific amount to excavate prior to the field season; the plan was to get as much done as possible in a seven-week period given the effectiveness at which the Salmon Net crew worked. Once the data was collected, it would be used to describe the lithic material culture at Salmon Net, to describe the function of the Salmon Net site, and to determine the chronology of Salmon Net.

[2] In the end we did excavate the area chosen prior to the field season.

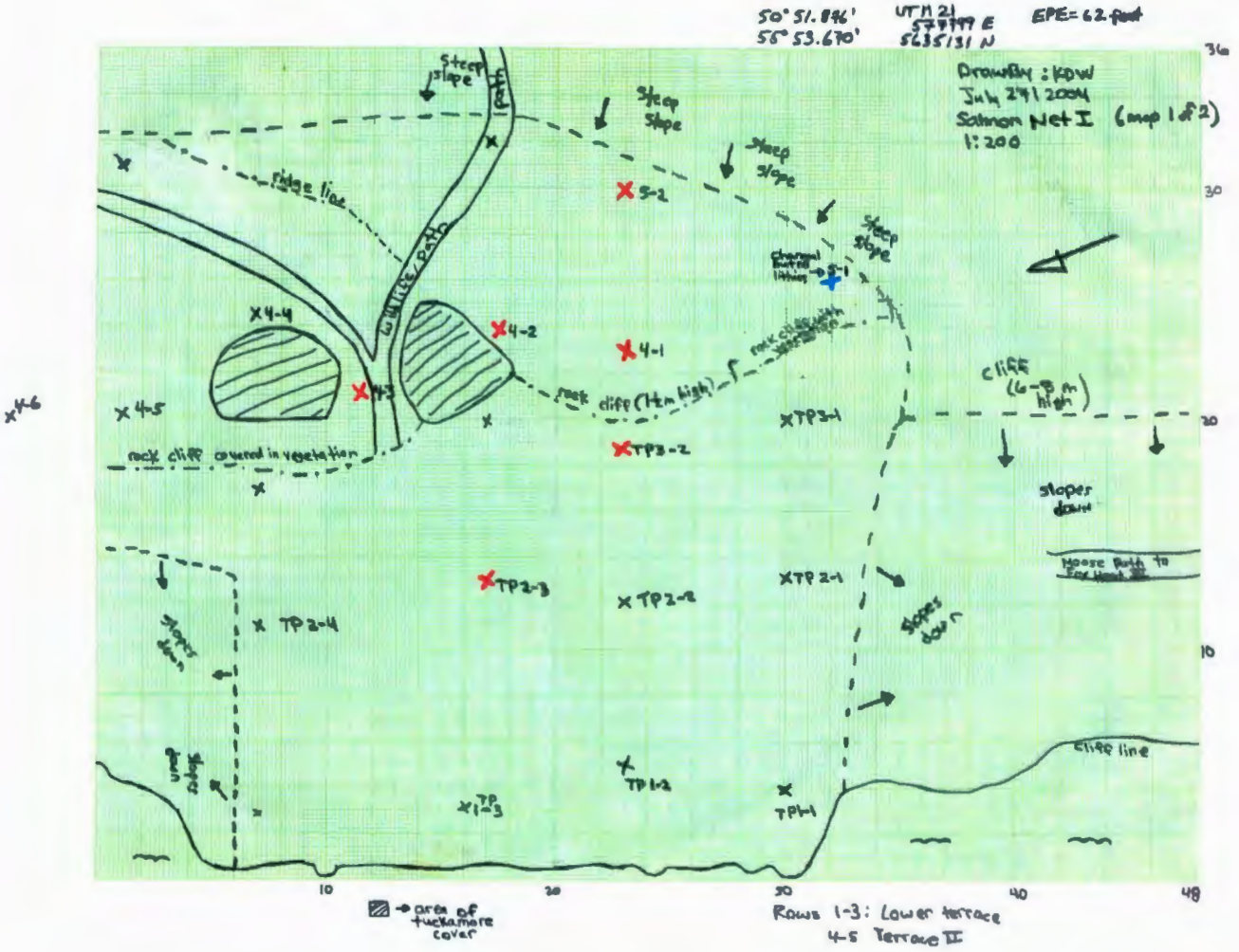


Figure 3.2: Drouin's Salmon Net site map with artifact (red) and charcoal (blue) yielding test pits highlighted (Drouin 2005).

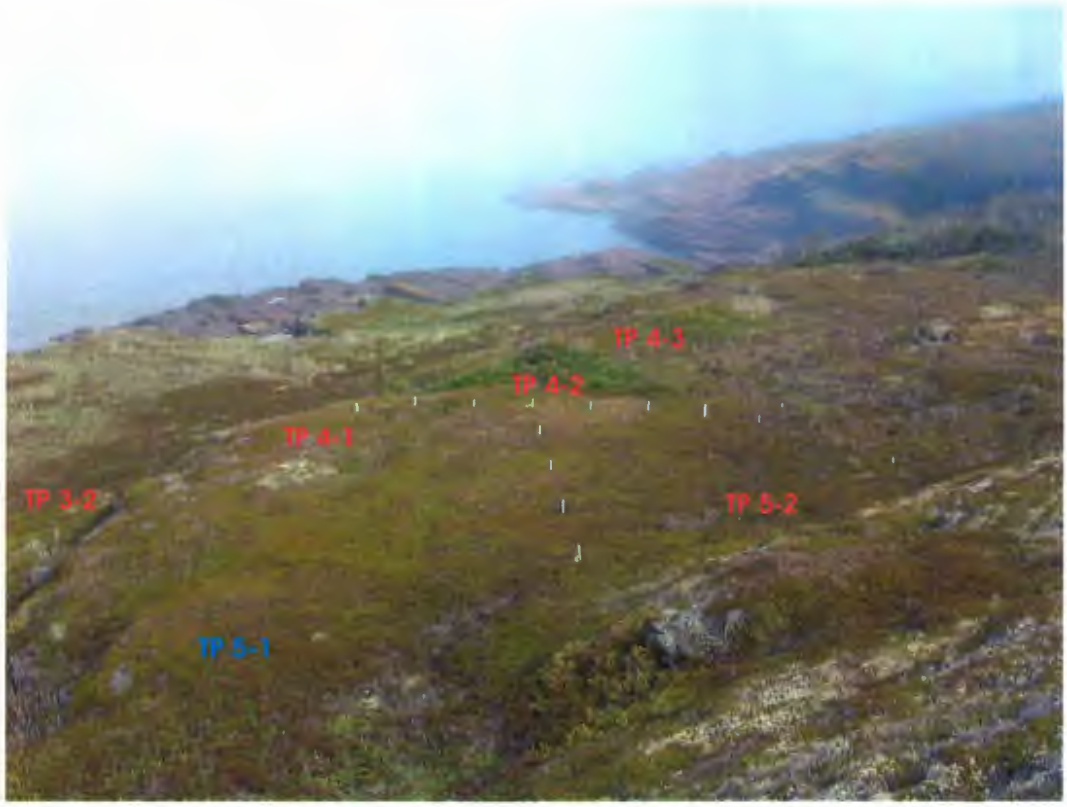


Figure 3.3: Salmon Net 2006 blank canvas facing north with Drouin's artifact (red) and charcoal (blue) yielding test pits labeled.

Figure 3.4: Salmon Net facing south, setting up the grid.

Description of the 2006 Excavations

Introduction

In total over the seven-week excavation we opened up an area of 38m² (Figure 3.5); 31m² of which were excavated down to sterile. To begin with we opened five, 1 x 1m units near some of Drouin's more successful test pits[3] from the 2004 survey (Drouin 2005) (Figure 3.6). This was done in order to explore which area(s) looked like they might yield the most cultural information. In four of the five initial units (N1017 E994, N1012 E991, N1013 E994 and N1010 E996) artifacts were found as soon as the cultural level was reached. Since these four units were relatively close to one another, on the same small terrace, we decided to extend the excavation so that they met one another. Until the end of the third week we opened up as many units as we could in that area, down to the initial cultural level (Figures 3.7, 3.8 and 3.9). We proceeded in this manner since we were doing a plan excavation (as discussed above), and we wanted to open up as much as we thought we could excavate in the last four weeks so that the entire excavation could proceed by following natural soil horizons. In our view having the entire excavation (as opposed to different sections and trying to piece them together later) according to the various natural soil horizons would be an effective way to interpret the cultural situation at different stages in time (Figures 3.10 and 3.11).

The fifth unit (N1025 E998), which was a short distance away from the other four initial units, did not yield any cultural material. Therefore the area was deemed unproductive and was thus abandoned.

[3] Specifically TP 4-2, which contained charcoal and fire-cracked rock; TP 4-1 which contained flakes and an endblade; TP 5-2 which contained flakes and a scraper; and TP 4-3 which contained a characteristic Groswater endblade and some flakes (Drouin 2005) (Table 3.1, Figure 3.1).

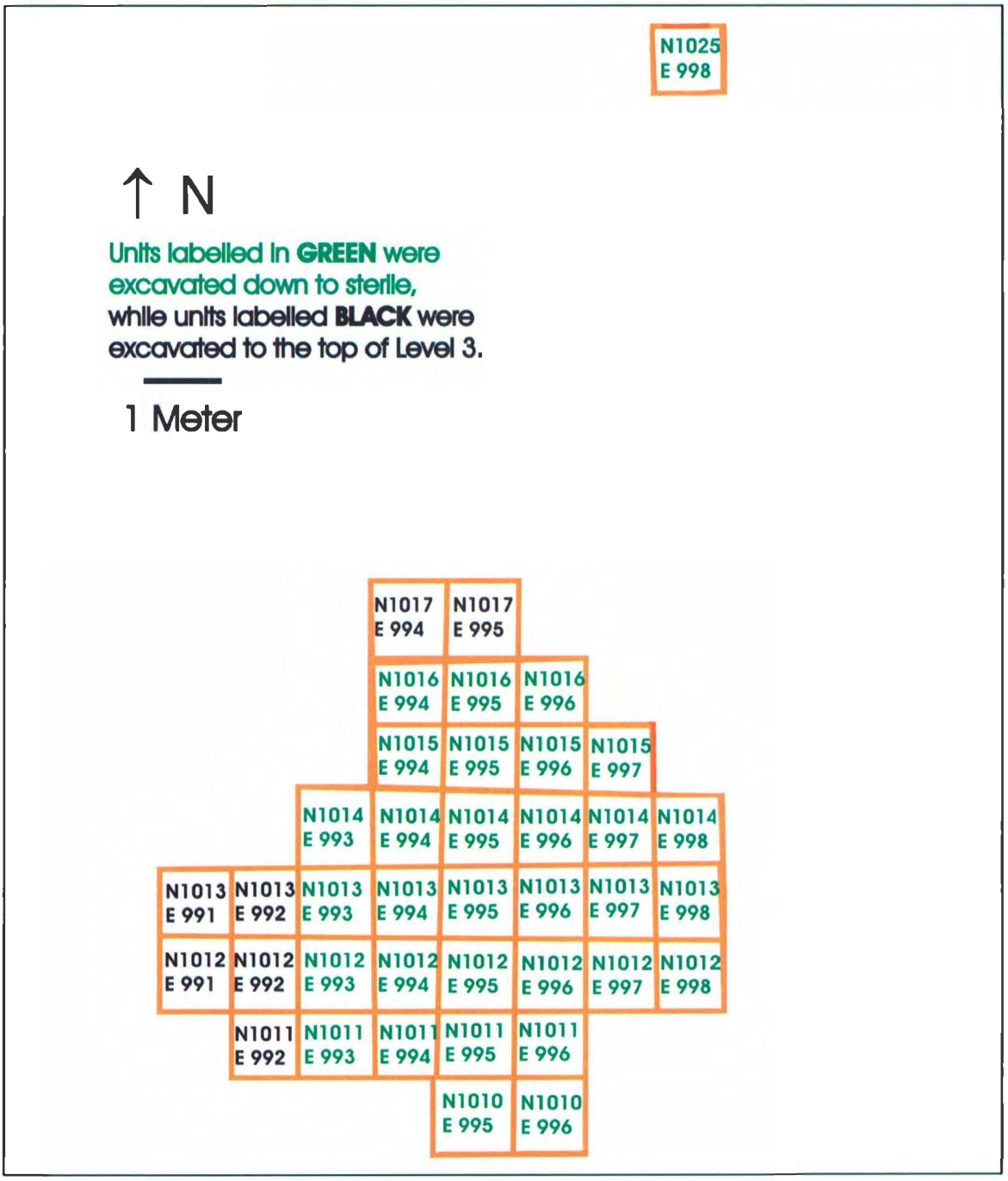


Figure 3.5: Excavation area with labeled units.

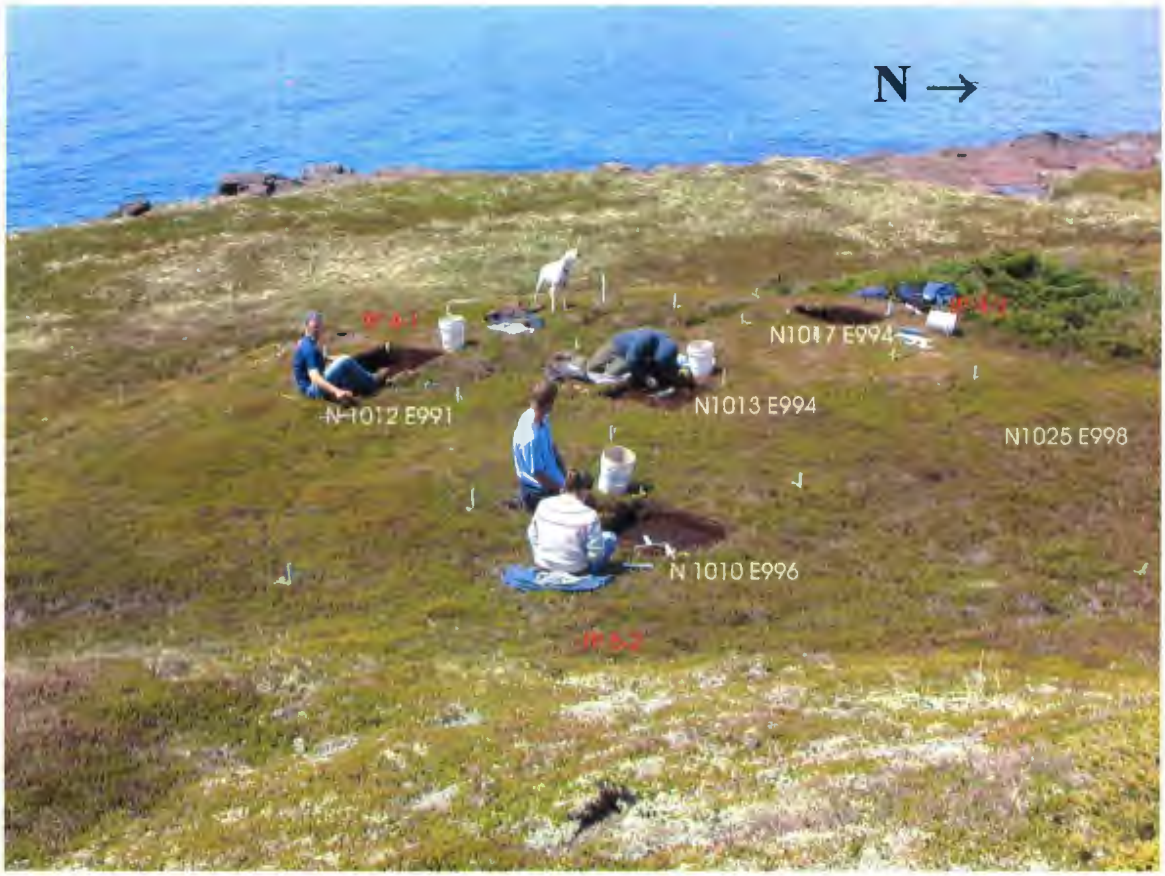


Figure 3.6: Initial excavation at Salmon Net (EfAx-25) with labeled units and some labeled test pits.

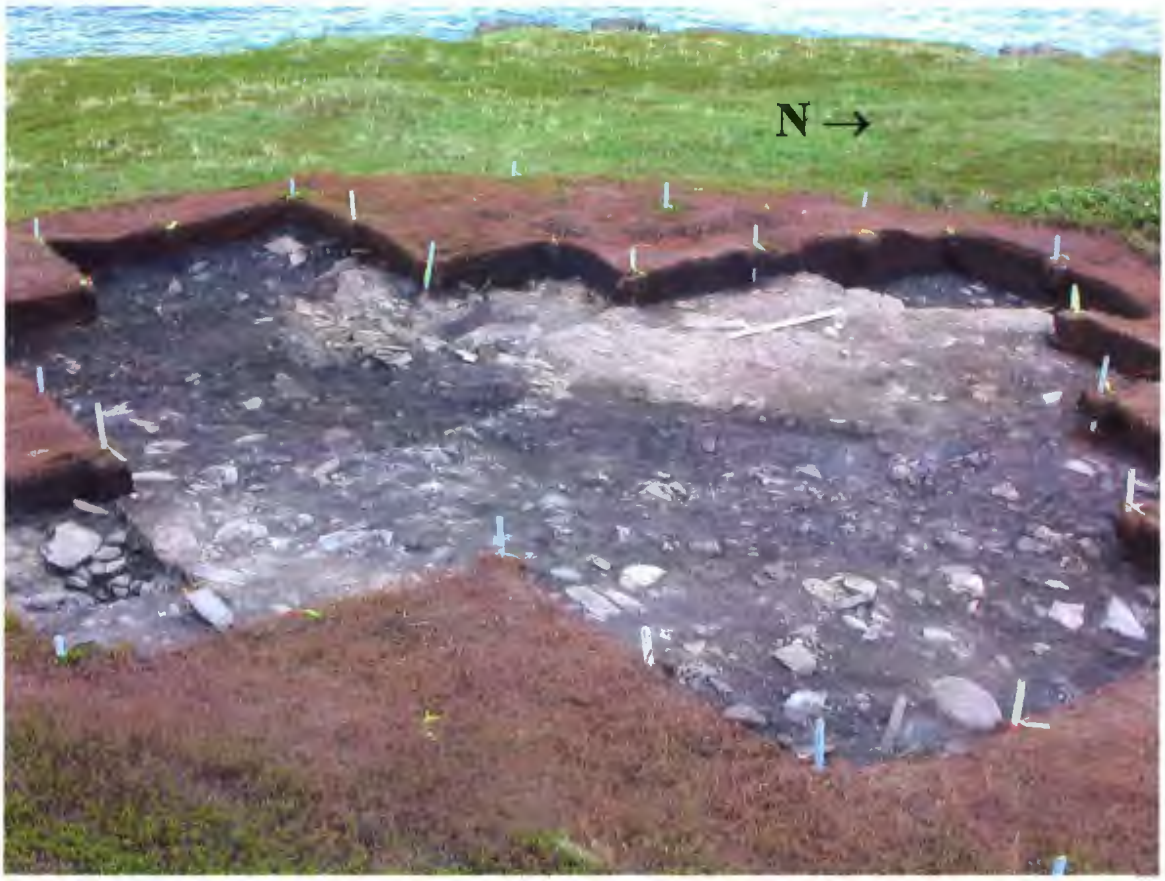


Figure 3.7: Extended excavation, full extent, down to cultural Level 3 (facing west).

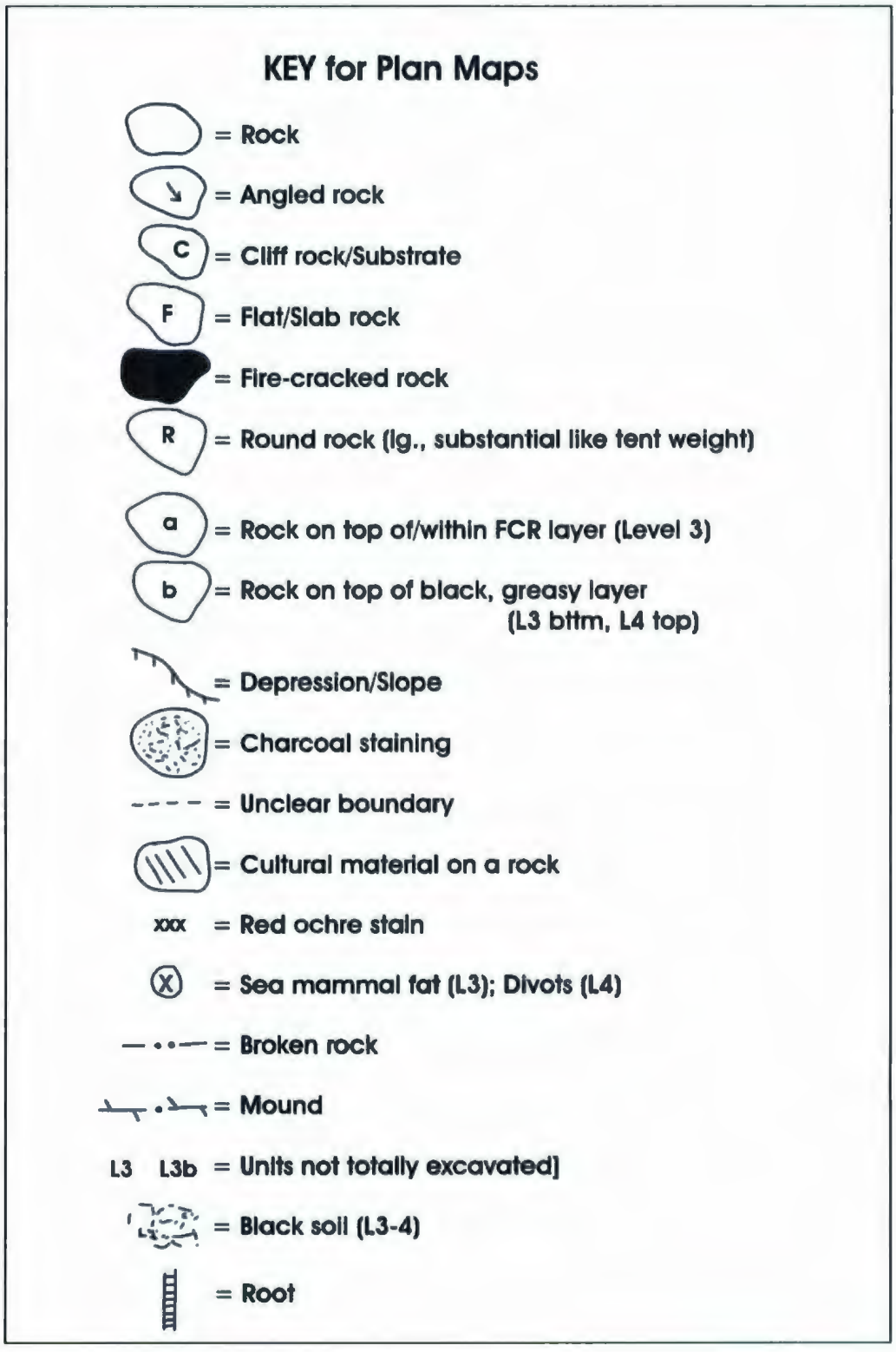


Figure 3.8: Plan maps key.

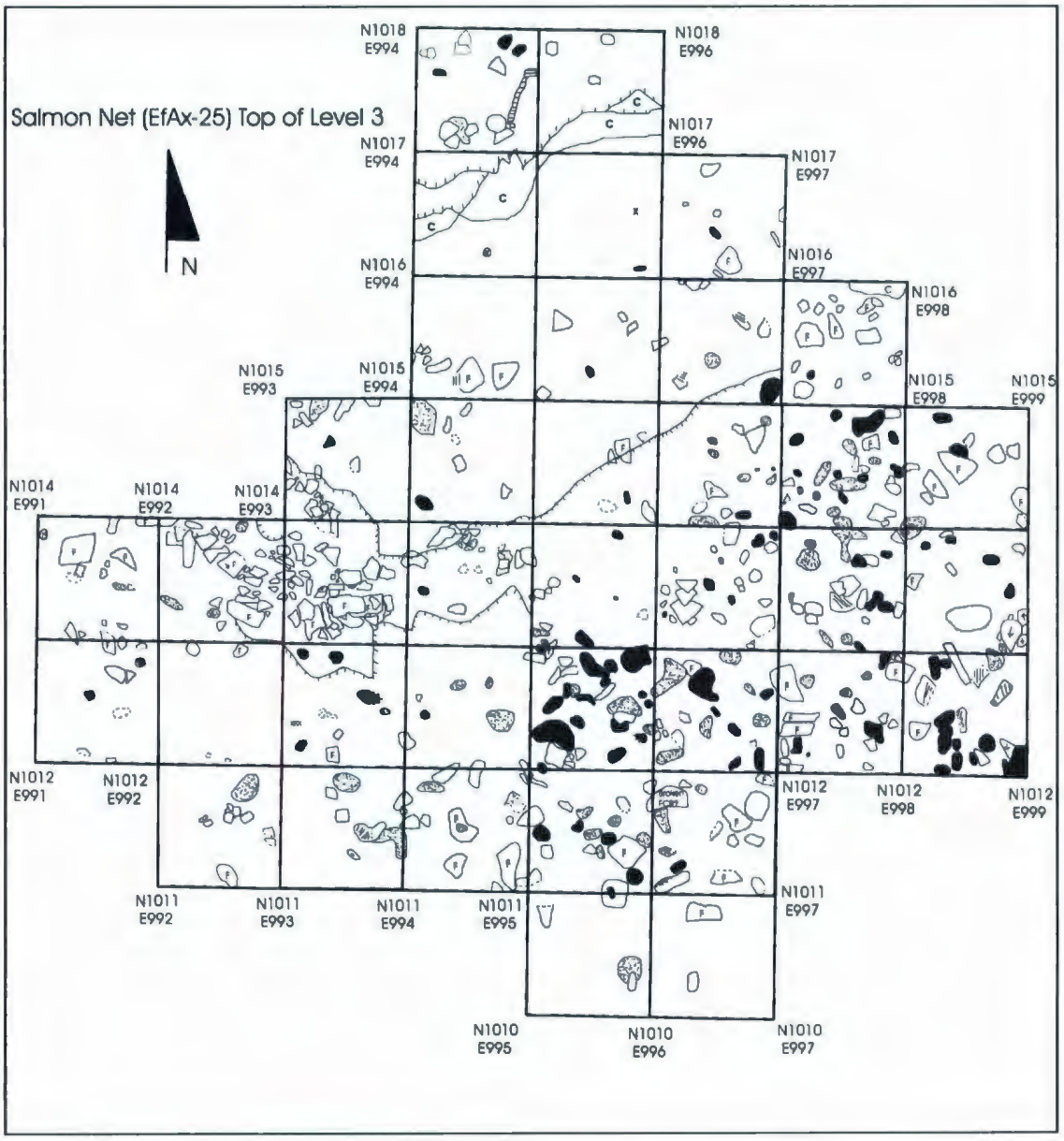


Figure 3.9: Salmon Net (EfAx-25) plan map, Level 3 top.

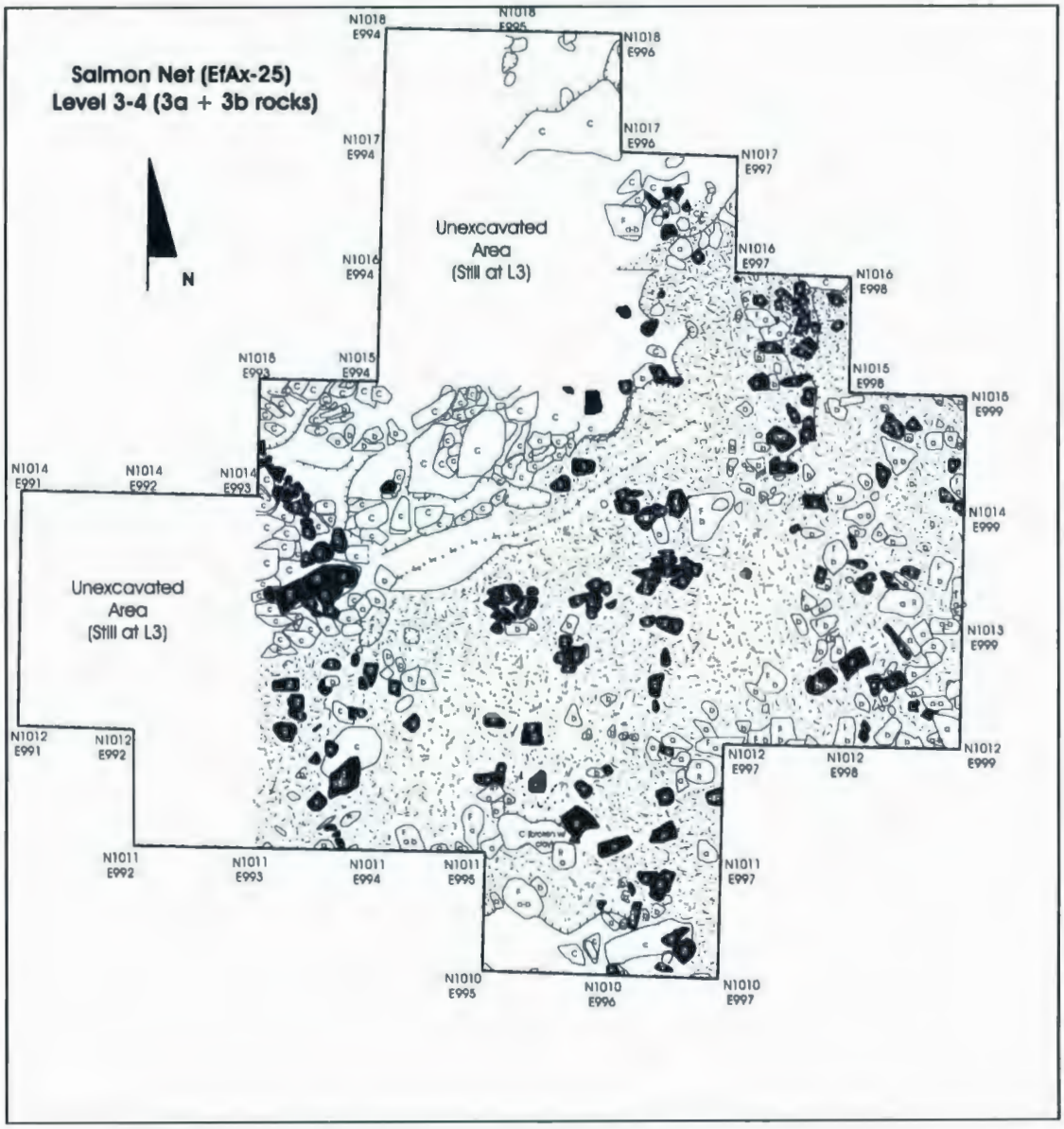


Figure 3.10: Salmon Net (EfAx-25) plan map; Level 3-4, 3a and 3b rocks.

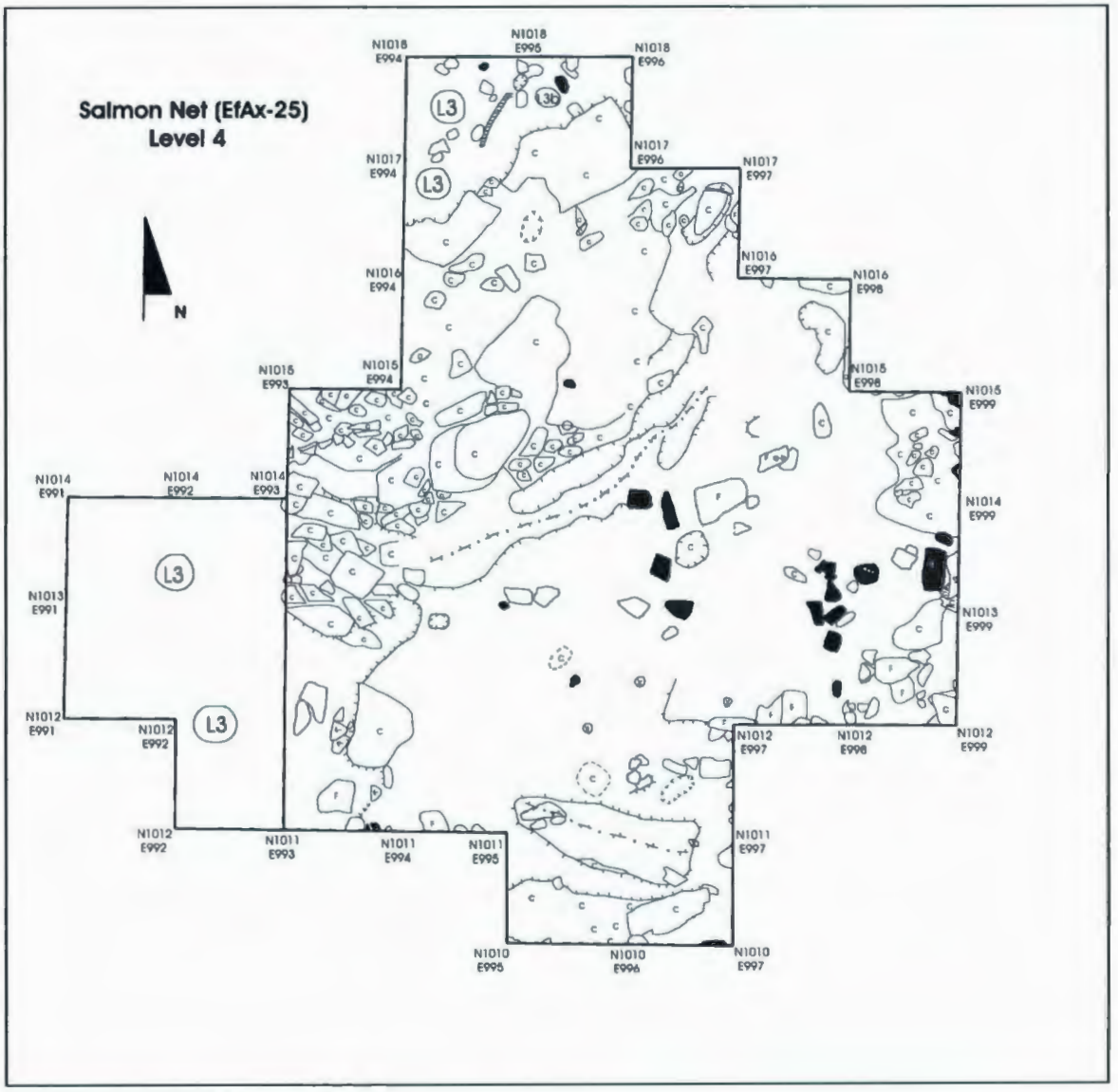
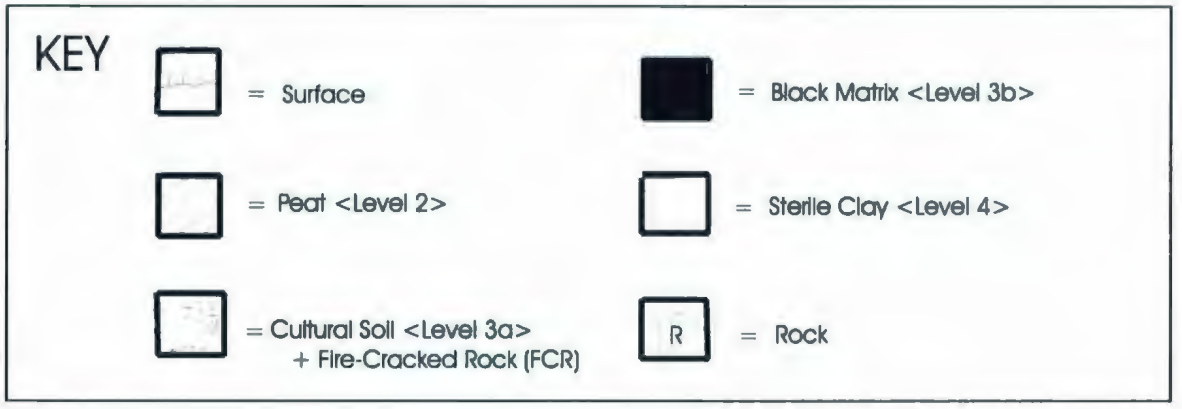


Figure 3.11: Salmon Net (EfAx-25) plan map; Level 4.

Stratigraphy[4]

The site is covered by roots and small bushes, which we designated Level 1. On average Level 1 was 10 cm deep. Underneath this level was a thick layer of dark brown peat mixed with rotting wood and roots. This peat layer was designated Level 2 and on average was 25-30 cm thick. The cultural level, Level 3, was found directly below the peat. This level was characterized by a mottled matrix of fire-cracked rock, brown and black soil, clay, disintegrating rock, charcoal and artifacts. It was difficult, if not impossible, to discern whether this cultural Level 3 reflected one occupation or a sequence of occupations, since it was such a consistent, mixed, mottled matrix. We did note some apparently structural rocks with the Level 3 mottled matrix underneath them. This could either reflect multiple occupations or that the site was restructured during one long-term occupation. We labeled the mottled matrix underneath the seemingly structural rocks Level 3a. The mottled Level 3 and 3a matrix ranged from 5-25cm thick. Below the cultural Level 3 and 3a, in most areas of the excavation, but particularly the center and eastern portions, we found a thin layer (0-5cm) of very black, fine and greasy soil. We believed this to be cultural, perhaps the result of settling organic deposits, thus it was labeled Level 3b. It is important to note that we did not find any cultural material in the Level 3b layer. Finally, below the cultural level(s) we reached the substrate, Level 4. The substrate consisted of clay over grey shale or cliff rock (Figures 3.12, 3.13, 3.14, 3.15, 3.16, 3.17 and 3.18).

[4] Since one of the original 1x1m units (N1025 E998) was abandoned because it lacked cultural material, it will not, for the most part, be referred to in this site report. However, I would like to note its stratigraphic sequence for future reference. Level 1 consisted of the surface brush layer – it was between 4-6cm thick. Level 2 consisted of dark brown peat – it was between 4-14cm thick. Level 2a consisted of light brown, grassy, and particularly smelly peat – it was 4-10cm thick. Level 3 consisted of charcoal mixed with sand and shale. It was a very wet and greasy and was between 6-10cm thick. Level 4, the substrate, was also very wet and consisted of shale.



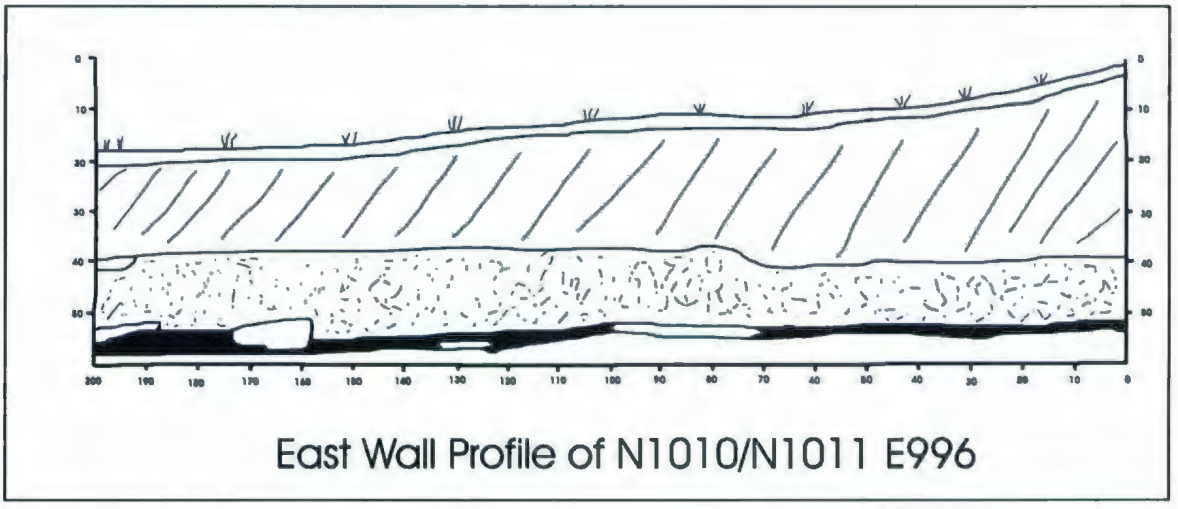


Figure 3.12: East wall profile of N1010/N1011 E996.

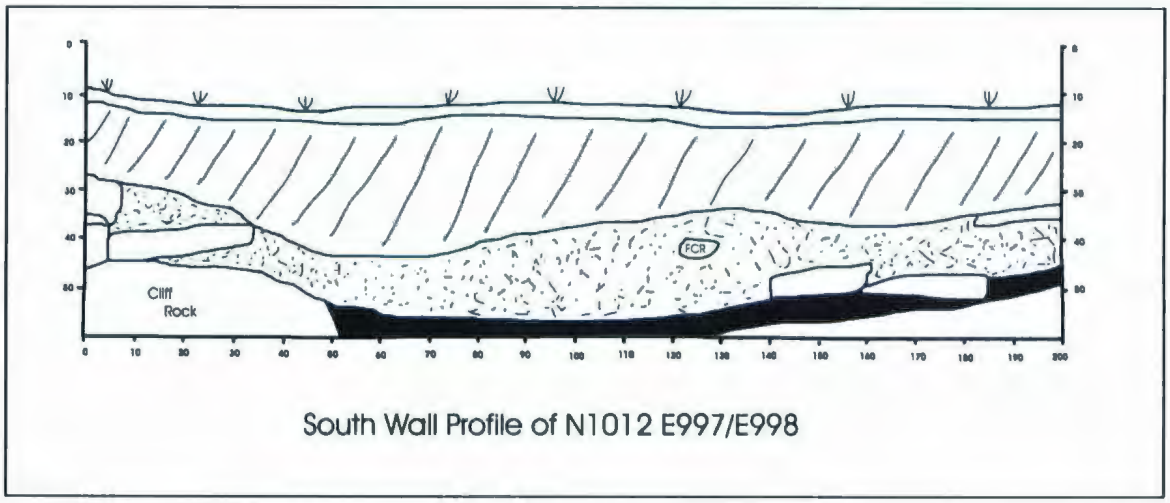


Figure 3.13: South wall profile of N1012 E997/E998.

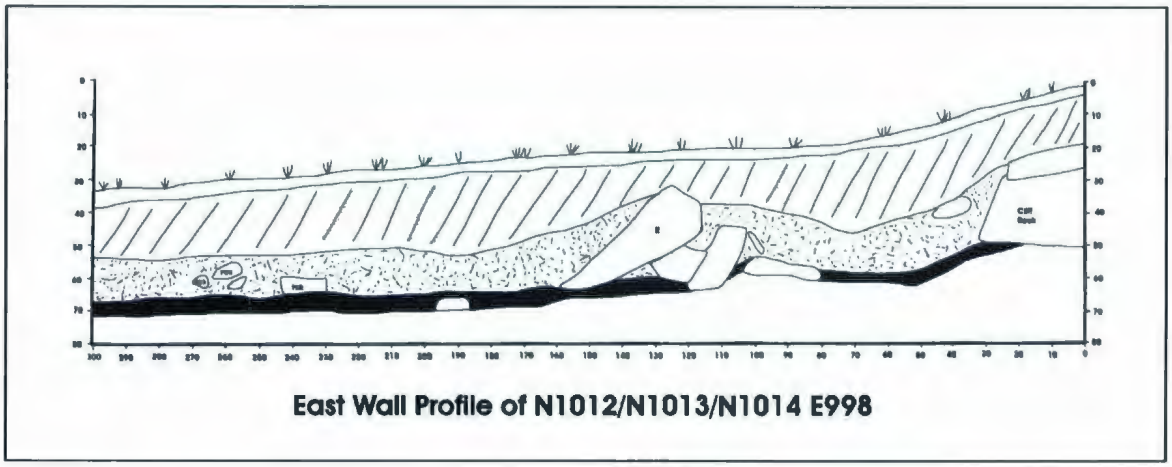


Figure 3.14: East wall profile of N1012/N1013/N1014 E998.

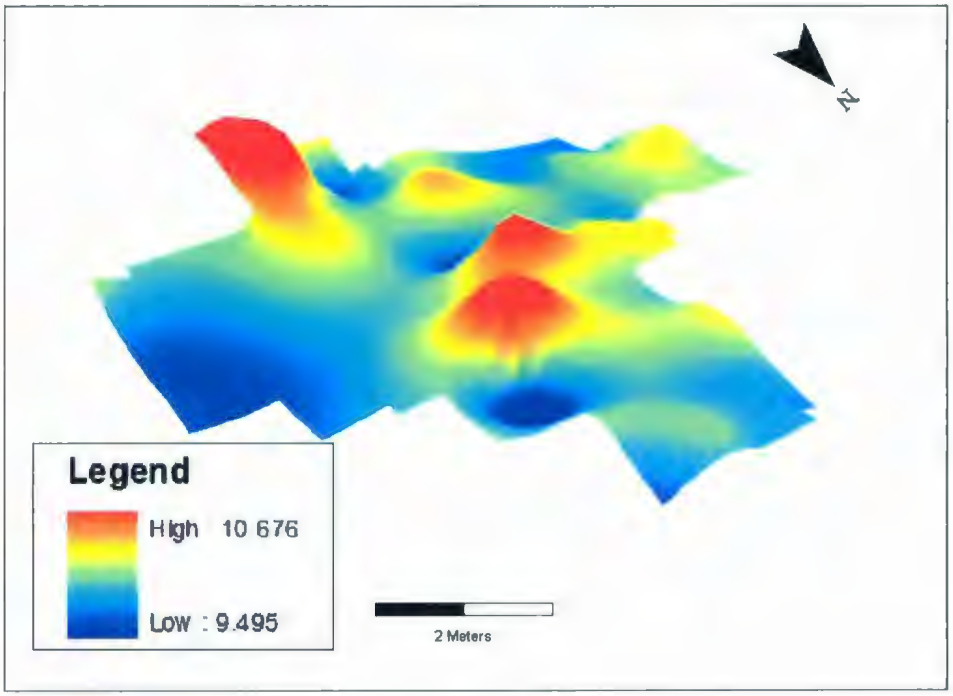


Figure 3.15: Contour map, surface, NE view.

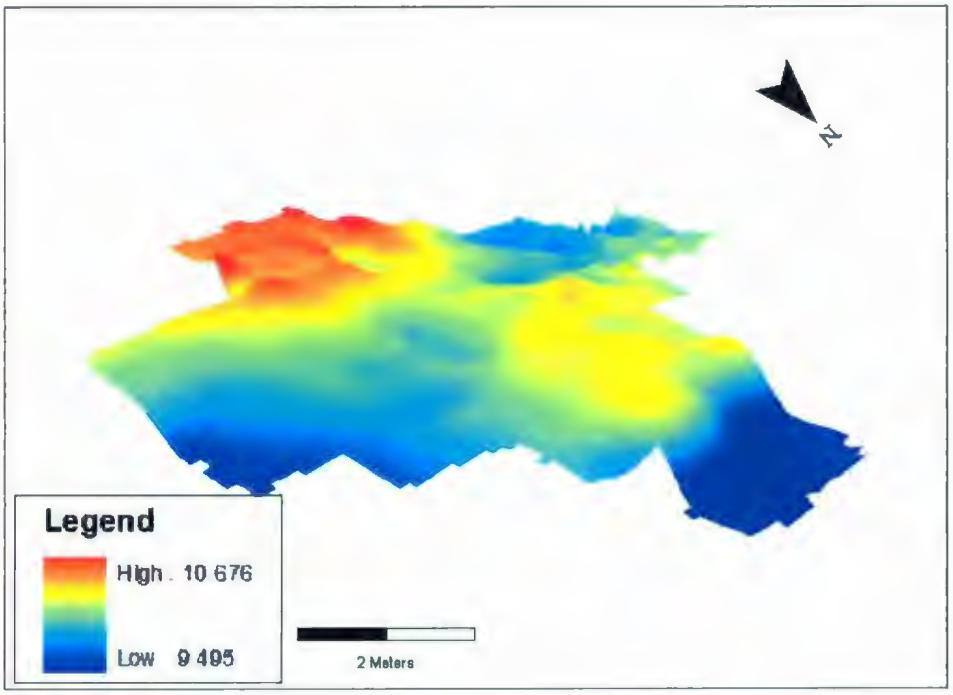


Figure 3.16: Contour map, Level 3, NE view.

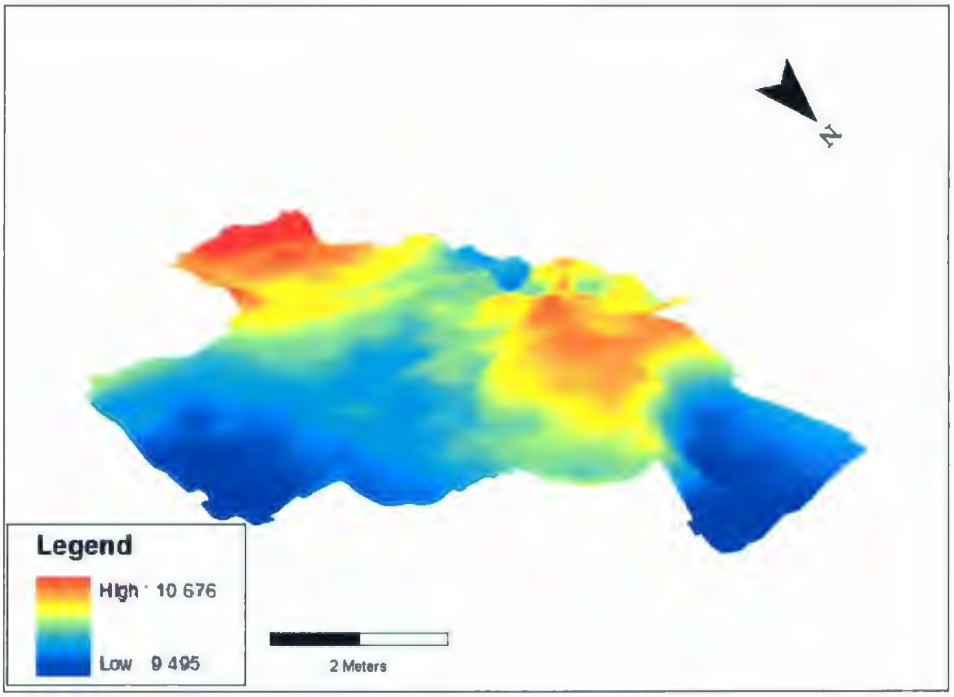


Figure 3.17: Contour map, Level 3-4, NE view.

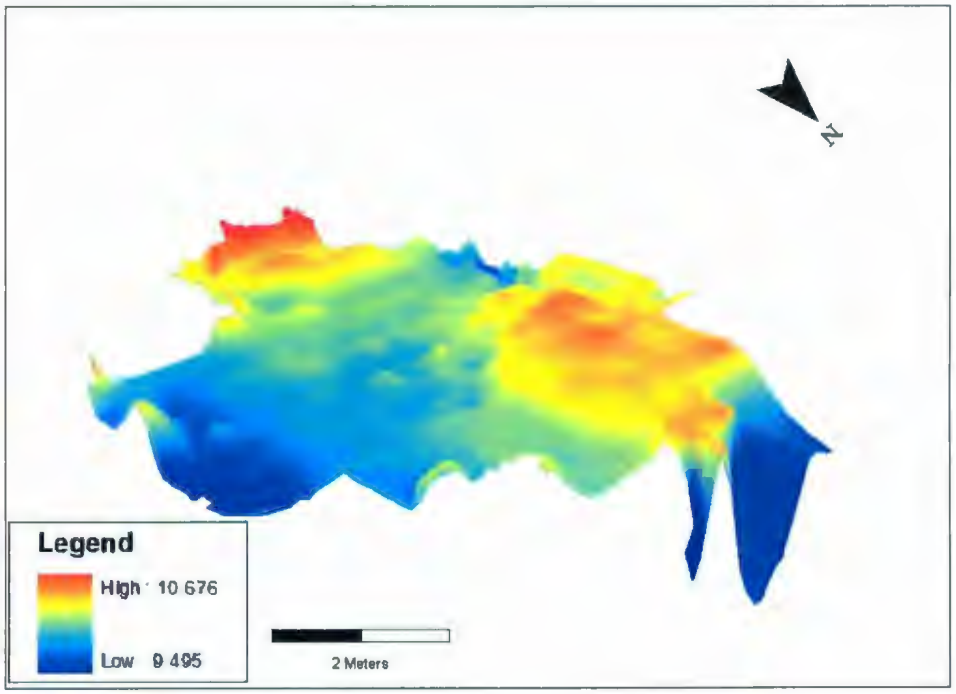


Figure 3.18: Contour map, Level 4, NE view.

Feature 1

This was a flake concentration just below the surface of Level 3 in unit N1013 E995 (Figure 3.19). It consisted of a few hundred very small, multi-colored retouch flakes. The concentration was about 50 cm long and 30 cm wide, and then it thinned out over a larger area. It was found right at the edge of an activity area (Feature 4), in a crevice. This flake concentration likely reflects a spot in which tool retouch or manufacturing took place; in fact there were some endblades nearby (EfAx-25:163, EfAx-25:164, EfAx-25:166 and EfAx-25:167) and based on their colors and chert-types it appears as though some of the chert flakes could have come from them.

Feature 2/13

Features 2 and 13 are described together because they are components of one feature. This feature is part of a structure edge and is characterized by a long (about 1.5 m), narrow (about .4-.5 m) mound of clay and a shallow gully in units N1011 E995, N1010 E995, N1011 E996 and N1010 E996 (Figure 3.20 and 3.21). This mound/structure edge was actually the second one we discovered (see Feature 10). It is about 2.5 m south of the first identified mound/structure edge. The eastern edges of the mound/structure edges flare away from each other at about a 45° angle (Figure 3.22). When we first identified this feature while excavating L3, we thought it was some sort of pit (hence feature 2) because we had encountered the gully on the south side of the mound. The gully was filled with dark black dirt, small stones and some regular L3 mottled matrix. Once we fully excavated L3 to the north of the gully, we realized the

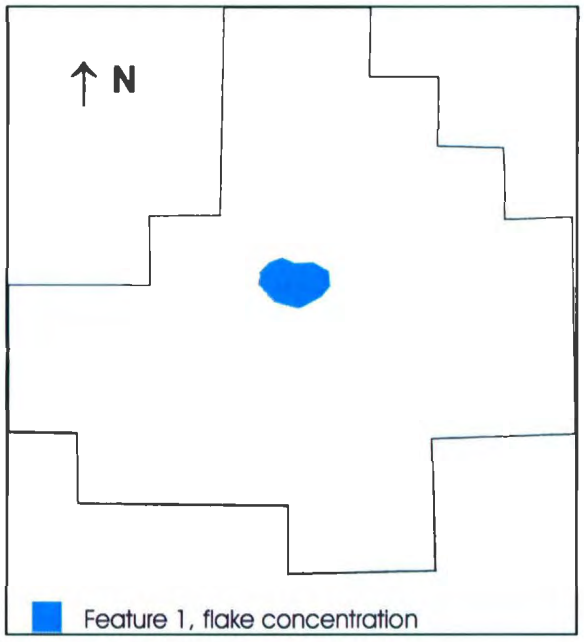


Figure 3.19: Feature 1, flake concentration.

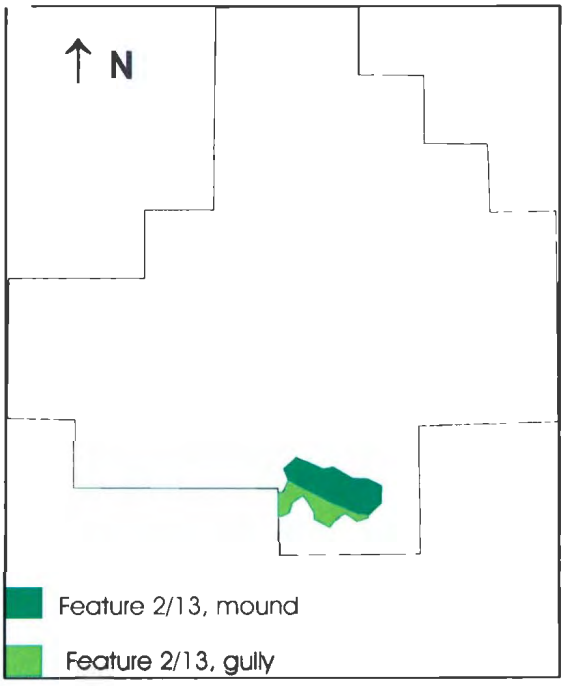


Figure 3.20: Feature 2/13, mound and gully, structure edge.

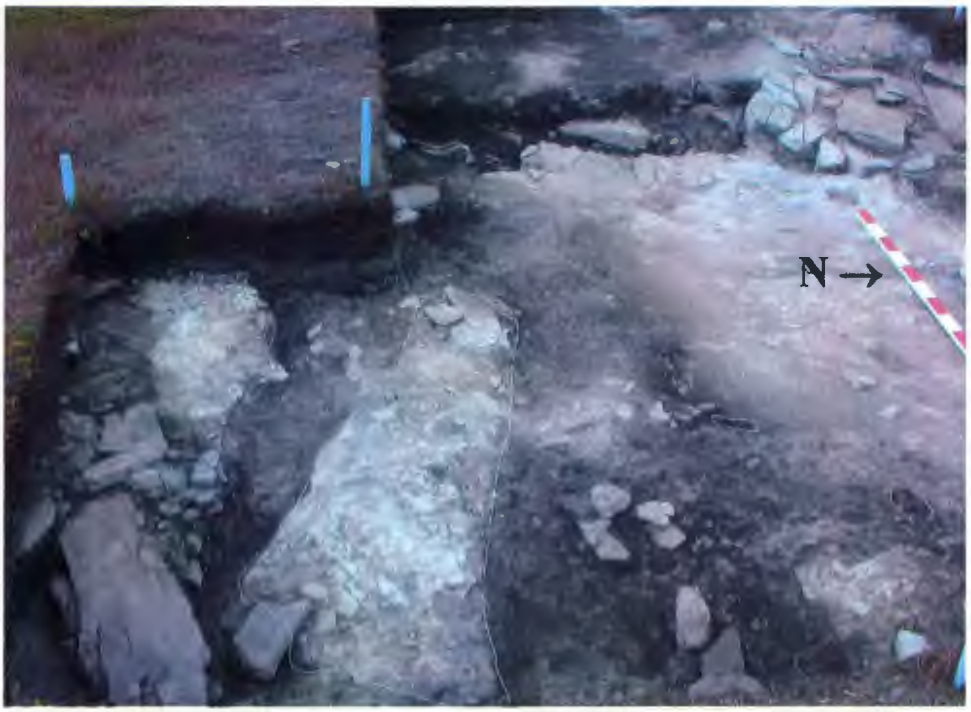


Figure 3.21: Feature 2/13, a mound (surrounded by white string) and gully (south of the mound), remnants of a structure edge.

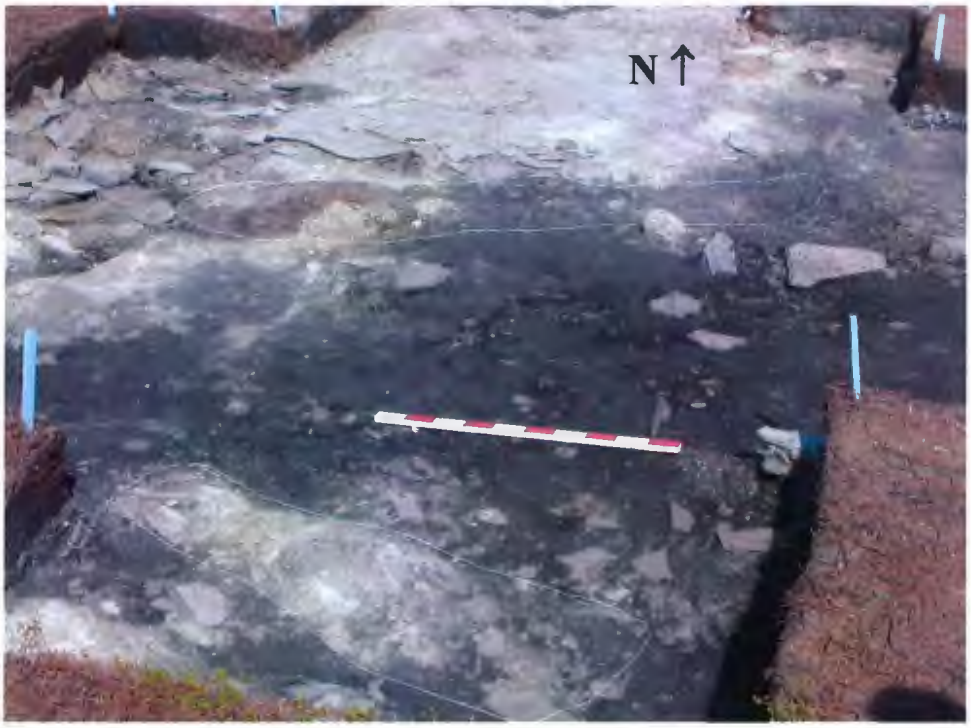


Figure 3.22: Features 10 (north, surrounded by white string) and 2/13 (south, surrounded by white string), mounds and gullies which make up the structure edges.

real event was the mound; the shallow gully was the result of building the mound. The mound, we believe, would have been constructed on the inside wall of a skin structure to keep out the draft when it was cold outside. The base of the structure would have been positioned in the gully and perhaps supported by packed snow since there were no rocks lining the edge.

Feature 3

This is a naturally occurring cliff found beneath the peat layer (Level 2) in units N1016 E994, N1016 E995 and N1017 E995 (Figures 3.23 and 3.24). It is designated a feature because it would have been part of the cultural landscape; it is a natural site boundary. The cliff is about 30 cm high and extends east/west beyond the limits of the excavation. We did not have enough time to explore the bottom or the east/west limits of the cliff; however the top of the cliff extends out onto an activity area (Feature 4).

Feature 4

This feature is designated as an activity area. It extends into units N1016 E994, N1016 E995, N1016 E996, N1015 E994, N1015 E995, N1015 E996, N1014 E993, N1014 E994, N1014 E995, N1014 E996, N1014 E996, N1013 E993 and N1013 E994 (Figure 3.24 and 3.25). It is characterized by very thin lens (less then 5 cm thick) of cultural material within a substrate-like surface (i.e. grey/white, ashy, dusty, dry clay), and is found immediately underneath the peat layer. This area was unlike the rest of the excavation, where we found about 20 cm of cultural build-up underneath the peat before

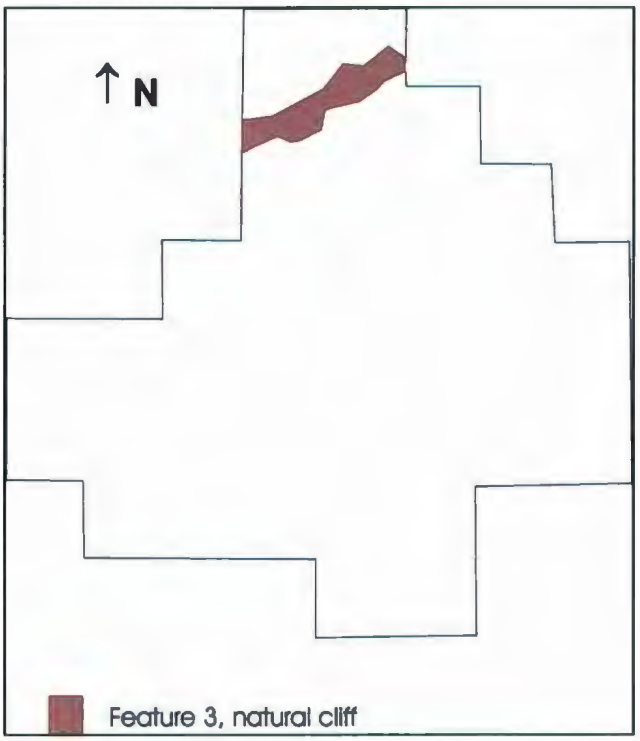


Figure 3.23: Feature 3, natural cliff.

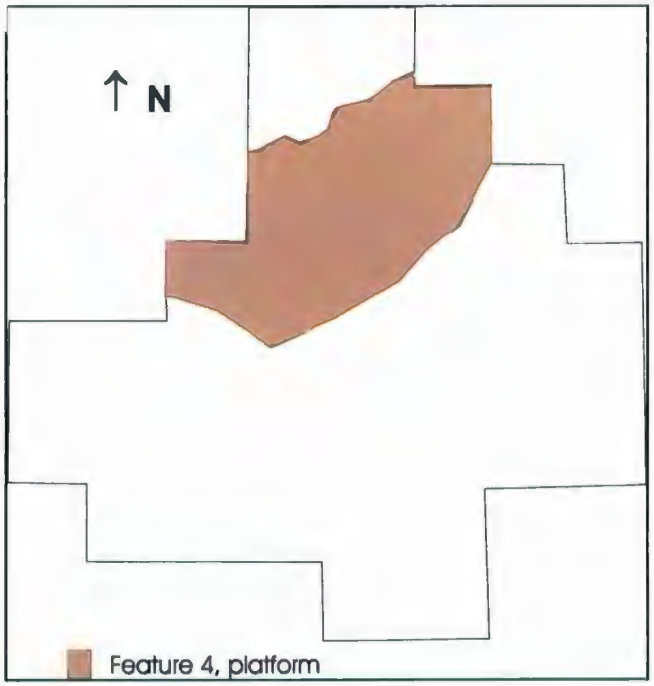


Figure 3.24: Feature 4, activity area.

Figure 3.25: Feature 3, cliff edge, and Feature 4, activity area (facing south).

reaching sterile. Therefore we determined that this area was outside the main habitation zone.

Feature 5

This is a cluster of rocks in units N1014 E993, N1013 E992 and N1013 E993, of an undetermined function (Figures 3.26 and 3.27). The rocks are cliff/bedrock from the area and are mostly flat. It was unclear whether the cluster was natural or cultural; but we speculated that it was cultural after finding some L3 mottled matrix (but no artifacts) under some of the rocks. This feature might have been a crumbled hearth, cache or, most likely, the result of building an entrance/exit from the proposed dwelling structure (Feature 17). It is located at the outside edge/corner of the structure and it is built on a small cliff, which forms a natural boundary for the proposed structure (Feature 17).

Feature 6

This is a layer of dark, almost black soil covering much of the excavation, including units N1013 E991, N1012 E991, N1013 E992, N1012 E992, N1011 E992, N1013 E993, N1012 E993, N1011 E994, N1013 E994, N1012 E994, N1011 E994, N1014 E995, N1013 E995, N1012 E995, N1014 E996 and N1013 E996 (Figures 3.28 and 3.29). It was found directly below the peat, just on top of (i.e. covering) the mottled, fire-cracked rock-filled cultural layer (Level 3). It is a thin layer (less than 5 cm) with some large charcoal samples. We concluded that this feature indicates an area of concentrated hearth activity. Interestingly we found a very similar layer at the bottom of the mottled, fire-cracked rock filled cultural layer – identified as Level 3b and Feature 12.

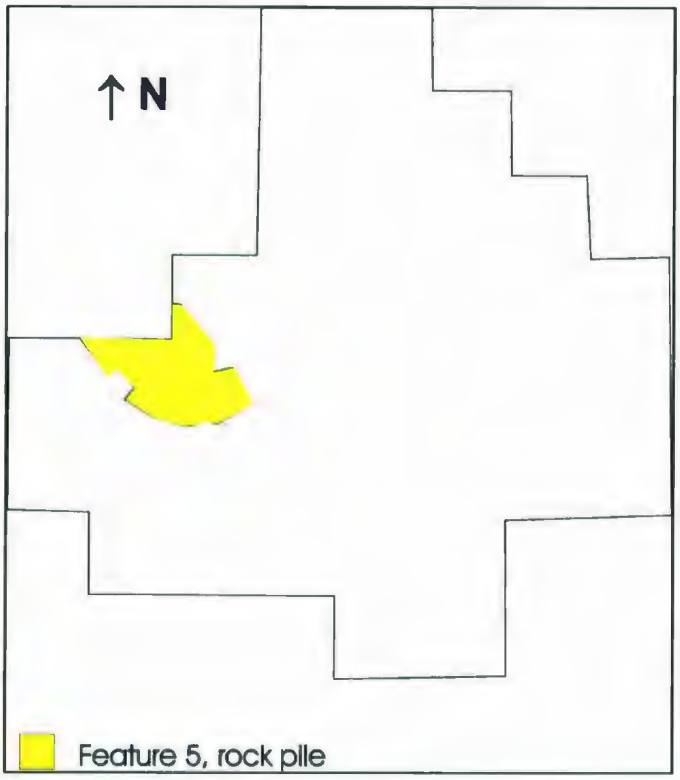


Figure 3.26: Feature 5, rock pile.

Figure 3.27: Feature 5, rock pile, in center surrounded by white string.

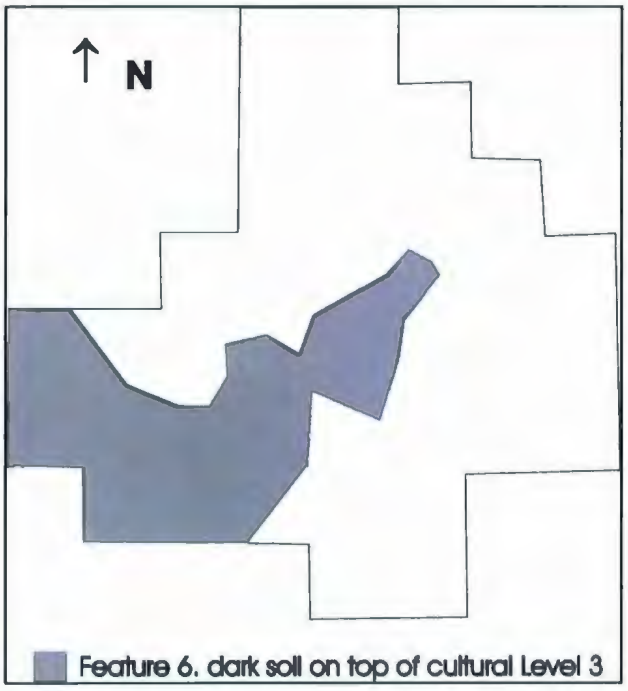


Figure 3.28: Feature 6, dark soil on top of cultural Level 3.

Figure 3.29: Feature 6, dark soil layer on top of cultural Level 3, most concentrated area surrounded by red line, though the feature clearly spreads out over much of the excavation.

Feature 7

This is a cluster of fire-cracked rock in unit N1012 E998, which extends into the southern and eastern walls of that same unit (Figure 3.30 and 3.31). It was identified early on in the excavation, before we had excavated so much fire-cracked rock in cultural Level 3, so by the end of the summer we questioned whether or not this was actually a feature. It is included in this report because it was a particularly large and dense cluster on top of and associated with some large boulders that could be the makings of a hearth or axial feature. Therefore this fire-cracked rock cluster/feature could reflect major hearth activity.

Feature 8

This feature was identified as a posthole. It was found in unit N1012 E994; it first appeared in the bottom of Level 3 (top) and then it ended in Level 4 (bottom) (Figures 3.32, 3.33 and 3.34). Its dimensions are: 14x14 cm (top) and 8x9 cm (bottom). It is a shallow posthole, less than 5 cm deep, so any sort of a post would have probably been surrounded by rocks to support it. We did not find any rocks surrounding this posthole.

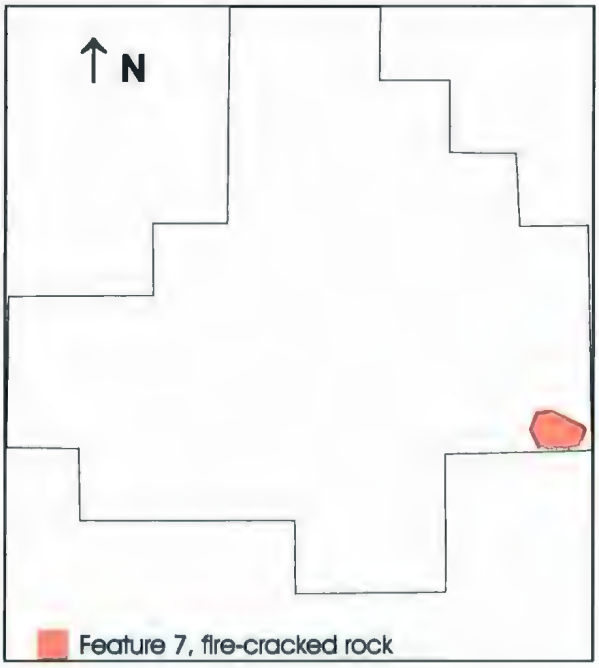


Figure 3.30: Feature 7, fire-cracked rock.

Figure 3.31: Feature 7, fire-cracked rock, lower right corner of the unit.

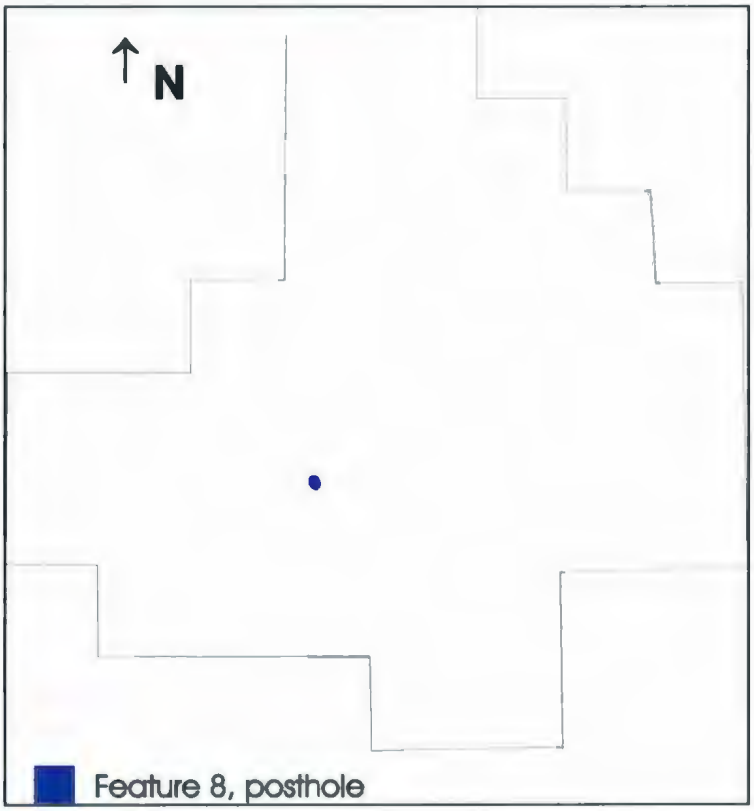


Figure 3.32: Feature 8, posthole.

Figure 3.33: Feature 8, posthole.

Figure 3.34: Feature 8, posthole (center), also Feature 10 (partial view of the mound/structure edge, north of the posthole), and Feature 5 (partial view of the rock pile, west of the posthole).

Feature 9[5]

This is a possible hearth feature from unit N1011 E994, extending into the S wall (Figures 3.35 and 3.36). It first appeared at the bottom of Level 3 and continued into Level 4. It looks to be oval; however, because it continued into the wall, its limits are unclear. This was designated a feature because there was no clay on top of the shale or cliff rock; the natural soil horizon went from Level 3(b), which was the mottled, fire-cracked rock-filled cultural layer, right down to the shale/cliff rock. Throughout most of the rest of the rest of the excavation we found a substantial layer of clay above the shale/cliff rock. The lack of clay in this spot could be a natural phenomenon; however there was clay all around it. Therefore it seems to be cultural phenomenon. We are unsure whether it reflects hearth activity or some other sort of cultural activity.

Feature 10

This is a structure edge, and it is characterized by a long (about 3 m), narrow (about .4-.5 m) mound of clay and a shallow gully in units N1013E 994, N1013 E995, N1014 E995, N1014 E996, N1013 E996 and N1014 E997 (Figures 3.37, 3.38 and 3.39). This mound/structure edge was the first one to be discovered (see Feature 2/13). It is about 2.5 m north of the second identified mound/structure edge. The eastern edges of the two-mound/structure edges flare away from each other at about a 45° angle (Figure 3.22). The mounds, we believe, would have been constructed on the inside walls of a

[5] This feature is similar in makeup to Features 15 and 16; they are all characterized by a thin or non-existent clay layer which reflects some sort of cultural activity.

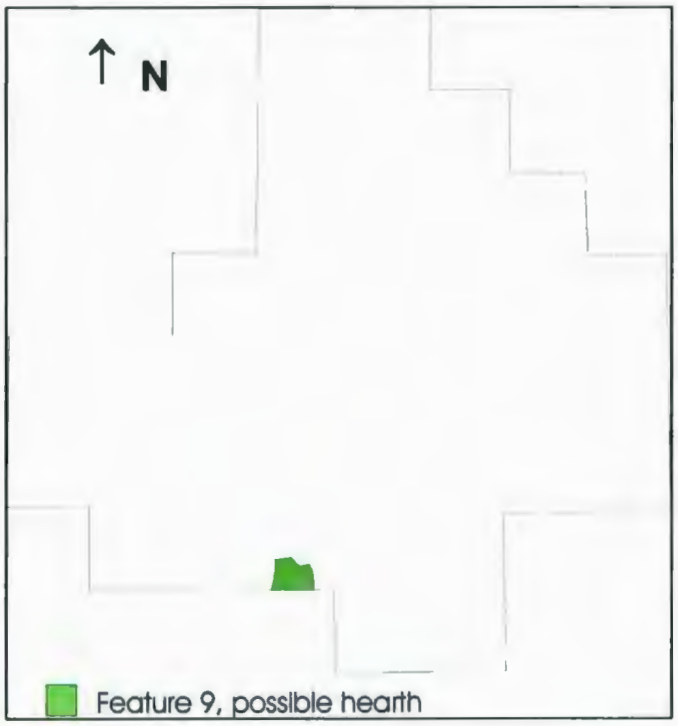


Figure 3.35: Feature 9, possible hearth or storage pit.

Figure 3.36: Feature 9, possible hearth or storage pit, surrounded by orange string.

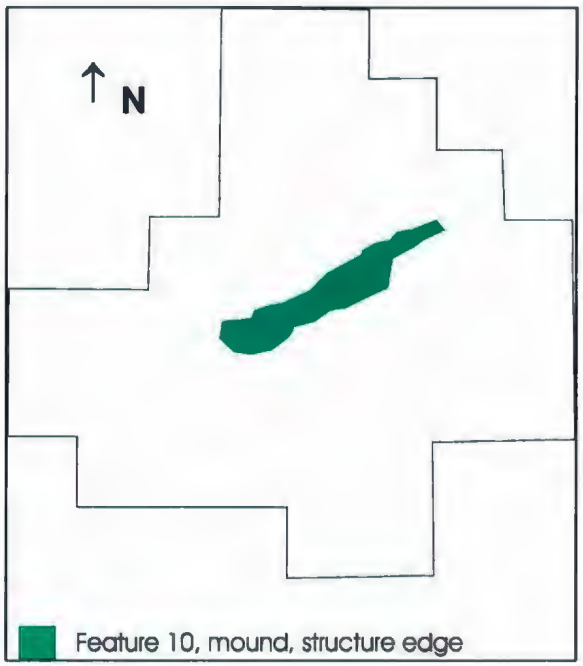


Figure 3.37: Feature 10, mound and gully, structure edge.

Figure 3.38: Feature 10, mound (surrounded by orange string) and gully (north of the mound), structure edge.

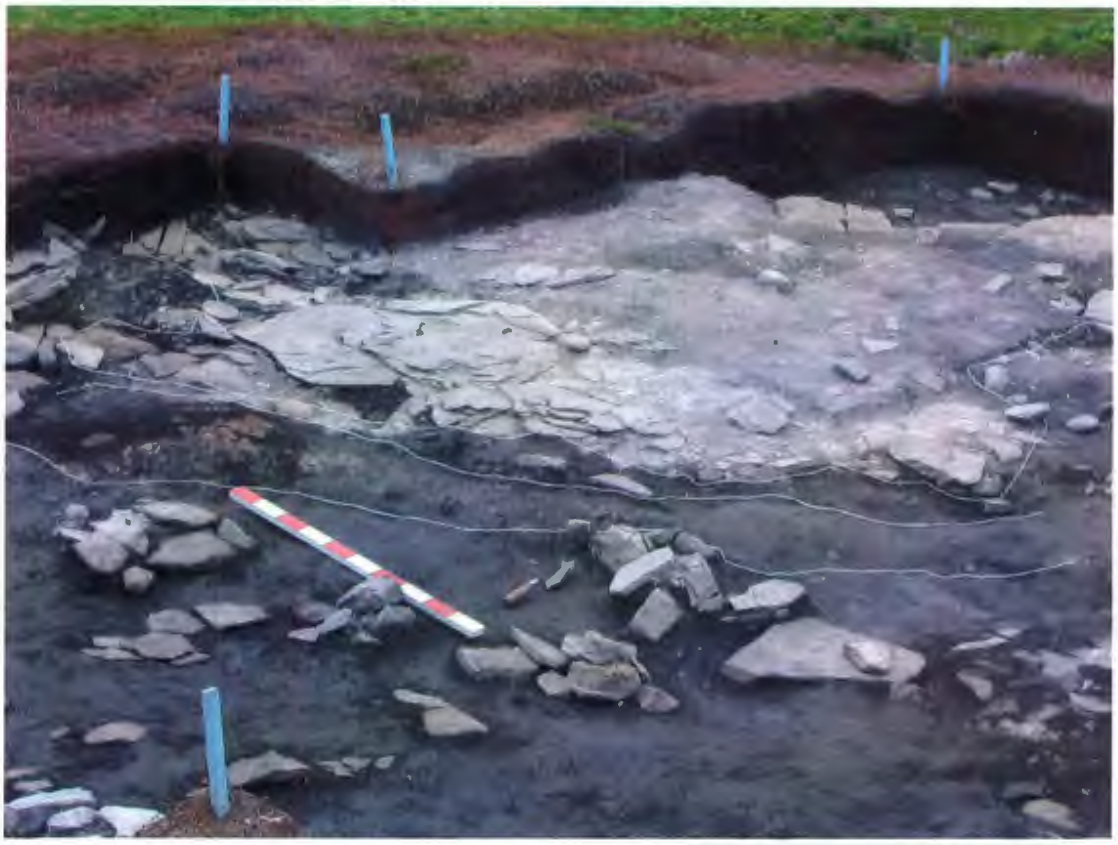


Figure 3.39: Feature 10, mound (surrounded by white string) and gully (north of the mound), structure edge - note Feature 4 (activity area) to the north.

skin structure to keep out the draft. The base of the structure wall would have been positioned in the gully and perhaps supported by packed snow since there were no rocks lining the edge. The gully associated with this feature lines the edge of Feature 4, which is identified as an activity area outside of the main dwelling.

Feature 11

This is a midden in unit N1011 E993 (Figures 3.40 and 3.41). It is classified as a midden because it is just outside (i.e. west of) the structure, possibly at an entrance (see Feature 17), and the soil composition was midden-like. It is characterized by dark, greasy soil (likely decomposed faunal material and fat) mixed with charcoal and pebbles.

Feature 12

This is a dark black, greasy soil layer found just below the mottled, fire-cracked rock-filled cultural Level 3 and above the clay and shale/cliff rock substrate Level 4. It is also referred to as cultural Level 3b in the stratigraphic description. It was found in units N1011 E993, N1012 E993, N1011 E994, N1012 E994, N1013 E994, N1011 E995, N1012 E995, N1013 E995, N1014 E995, N1010 E996, N1011 E996, N1012 E996, N1013 E996, N1014 E996, N1015 E996, N1016 E996, N1012 E997, N1013 E997, N1014 E997, N1015 E997, N1012 E998, N1013 E998, N1014 E998, N1015 E998 (Figures 3.42 and 3.43). Interestingly, the surface area of this dark black soil layer is similar to the dark black soil layer from above the mottled, fire-cracked rock-filled cultural Level 3 (Feature 6). This is certainly a cultural layer because of its composition (likely decomposed organic matter); however no flakes or artifacts were found in it.

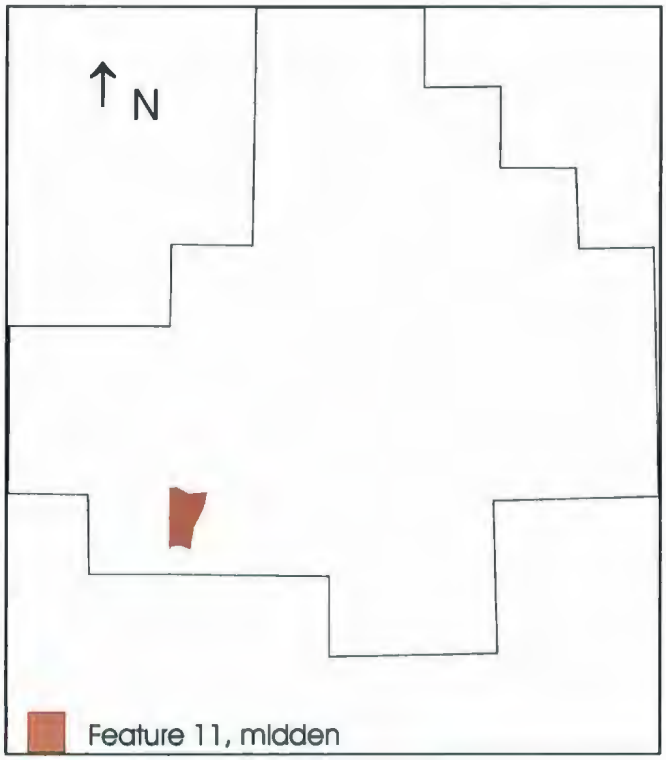


Figure 3.40: Feature 11, midden.

Figure 3.41: Feature 11, midden (surrounded by white string).

Figure 3.42: Feature 12, black layer, 3b.

Figure 3.43: Feature 12, black layer (3b) throughout most of the excavation except unexcavated areas (west) and the activity area (Feature 4, north, white area).

Feature 14[6]

These are three divots found in Level 4 in units N1011 E995, N1012 E995, and N1012 E996 (Figures 3.44 and 3.45). They are similar, but not the same as Feature 8 (the posthole) so they are referred to here as possible postholes. They differ in that their diameters are smaller than Feature 8, and they were dug into Level 4 (the clay) at an angle, as opposed to straight down. We believe these were supportive post holes as opposed to a main structural post hole like Feature 8.

Feature 15

This is a possible hearth found in unit N1013 E996 (Figures 3.46 and 3.47). It is similar in composition to Feature 9[7] in that it is characterized by a lack of clay between the cultural Level 3(b) and the shale/cliff rock. There was clay surrounding it so we are inclined to believe that the absence reflects a hearth or frequent cultural activity. In other words, frequent activity might account for the lack of clay because it was either worn down or dug away over time with use. Another detail that inclines us to associate this clay-less patch with hearth activity is a large, flat slab stone right beside it. This stone is certainly cultural and most likely a hearthstone.

Feature 16

This feature was found in units N1013 E998 and N1014 E998 (Figures 3.48 and 3.49). It is characterized by a lack of clay between the cultural Level 3(b) and the

[6] Feature 13 was combined with the description of Feature 2 because they are components of one feature.
[7] It is also similar in composition to Feature 16.

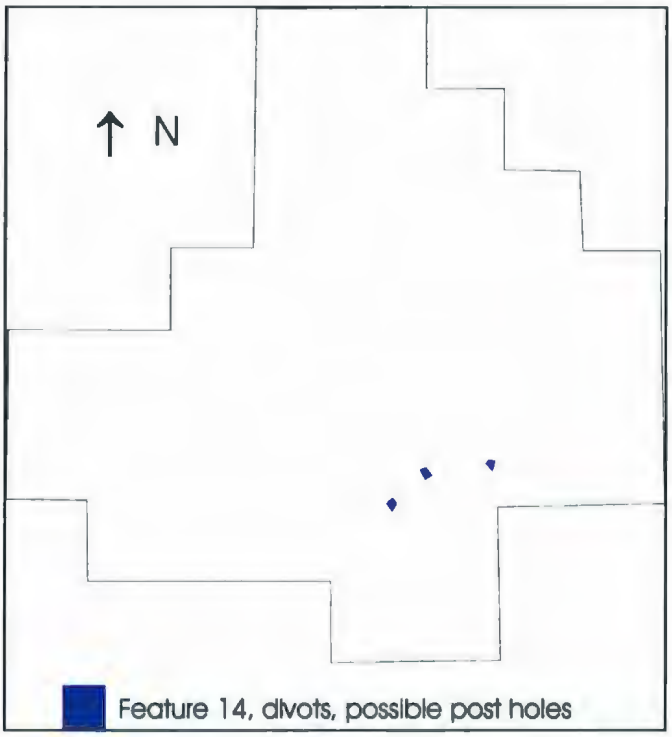


Figure 3.44: Feature 14, divots, possible post holes.

Figure 3.45: Feature 14, divots, possible post holes.

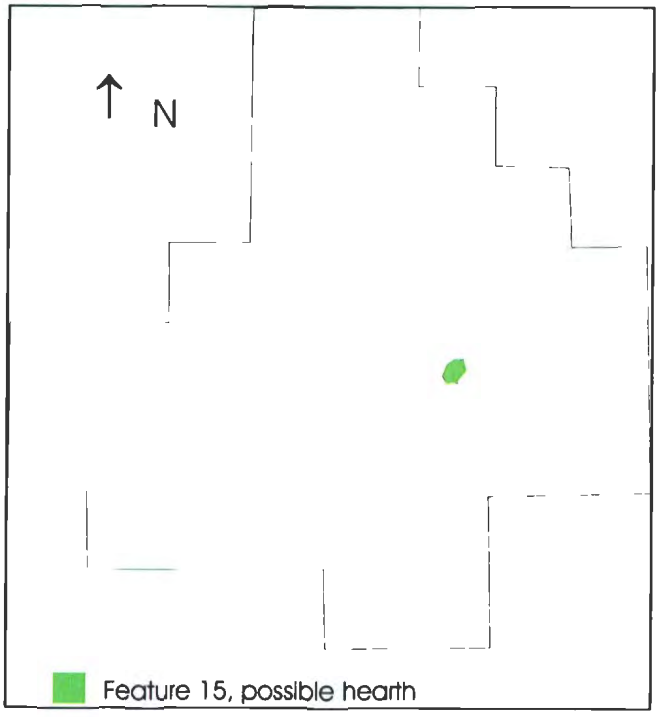


Figure 3.46: Feature 15, possible hearth.

Figure 3.47: Feature 15, possible hearth, surrounded by white string, southwest of large slab/hearth stone.

shale/cliff rock[8] and we believe it indicates a hearth or frequent cultural activity. Again, there was clay surrounding it so we are inclined to believe that the absence reflects a hearth or frequent cultural activity. In other words, frequent activity might account for the lack of clay because it was either worn down or dug away over time with use. It is located along the east wall of the excavation; just north of some large boulders in the east wall that we believe might be the axial feature but did not have time to explore. Accordingly, it makes sense that a high activity area would be near the possible axial feature.

Feature 17

This is a rock ledge, which demarcates an edge of the structure and could be an entrance/exit. It is a natural rock ledge that we found below the peat and some cultural Level 3 in units N1011 E993, N1012 E993, N1012 E994 and N1013 E994 (Figures 3.50 and 3.51). It is about 20 cm high. This feature is designated a structure boundary because, logically, people in the past would have used their natural environment to establish their boundaries.[9] Furthermore, it seems like there is a midden (Feature 11) just west of the rock ledge, and middens are often located just outside the structure. Finally, there were two large, flat slab stones associated with the ledge that seem like they could have formed an entrance/exit.

[8] Similar to Feature 9 and 15.

[9] It should be noted that about 4 m west of this feature is a natural rock cliff (about 1.5-2 m high), which further demarcates the site boundaries.

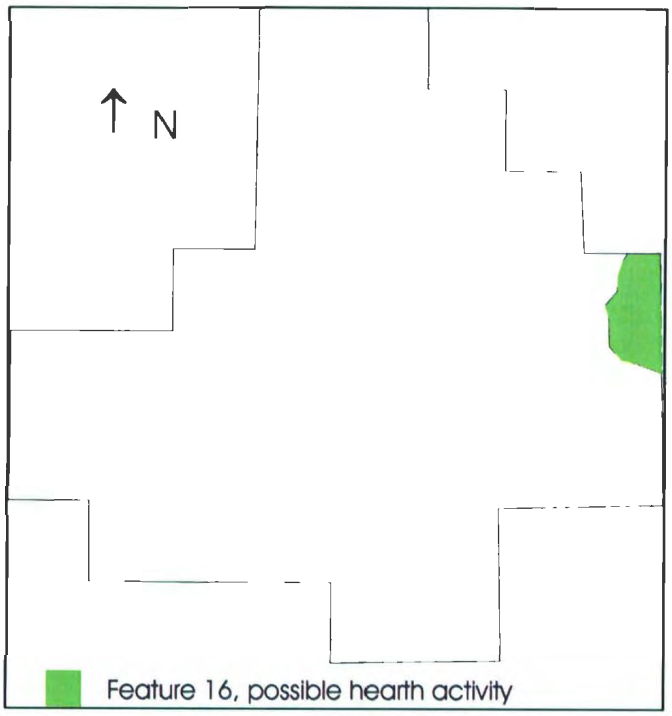


Figure 3.48: Feature 16, possible hearth activity area.

Figure 3.49: Feature 16, possible hearth activity area (surrounded by white string).

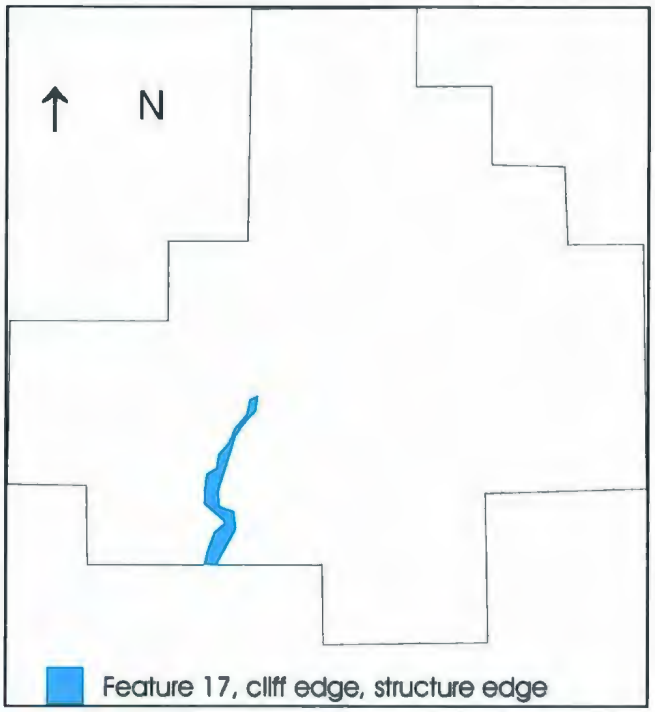


Figure 3.50 Feature 17, natural cliff edge, possible structure edge.

Figure 3.51 Feature 17, natural cliff edge, possible structure edge.

Discussion of the 2006 Excavation at Salmon Net

The 2006 field season at Salmon Net (EfAx-25) was extremely successful. Some of the most interesting and significant finds, which will be discussed here in turn, were the amount of fire-cracked rock in the cultural Level 3, the wide range of artifacts, and the structural evidence. It is also important to note that there is much more to be discovered at Salmon Net. Upon leaving the site after the seven-week field season, we had only just begun to scratch the surface of what cultural material was there. For example there were some large boulders in the east wall of the excavation which we thought could be the axial feature or main hearth but we did not have time to explore this feature or possibility further (Figures 3.52 and 3.53). Furthermore, Drouin (2005) found that this site covers a large area and thus there is a lot more to be excavated.

A noteworthy point about Salmon Net has to do with site location. Salmon Net is located on an oval terrace somewhat separated from the rest of a large, terraced field. The fact that it was somewhat separate from the rest of the site gave the impression that it was chosen for habitation because of the "spot factor" (Renouf, pers. comm.). The "spot factor" implies that the site was selected in large part because of the impression one gets standing there, looking out onto a 180° view, and not just for a more practical reason like resource availability (Figure 3.54). This is also the impression one gets at Phillip's Garden West, another Groswater site on the west coast of the Northern Peninsula (Renouf 2005). Thus, it seems like sense of place might have played a role in Groswater people's site selection.

Figure 3.52: Possible axial feature, N1012 E998 and N1013 E998, view east.

Figure 3.53: Possible axial feature, N1012 E998 and N1013 E998, view north.

Figure 3.54: "The Spot Factor", view west.

We found considerably more fire-cracked rock (FCR) in the Salmon Net excavation than any other material (Figures 3.55, 3.56 and 3.57). The cultural Level 3 was literally paved with it, layer upon layer, and in most places it seemed like there was more FCR than soil (Figures 3.58). We measured the amount of FCR in four of the units by bucketfuls, and on average a 1 x 1 meter unit contained two or three four-gallon bucketfuls.

Such a large amount of fire-cracked rock reflects frequent hearth activity, either for cooking purposes and/or for warmth. In light of this, Salmon Net could be a processing site in which lot of cooking or smoking of meat was taking place, or it could be a winter site and a lot of rocks were being heated to keep warm, or it could be a combination of both factors and the amount of FCR at Salmon Net is actually just reflective of general culture activity. Renouf (1985, 1994) noted that there was also a lot of FCR at the Phillip's Garden East Groswater site. Thus, heating rocks for cooking and/or warmth may be a culturally adapted and culturally significant Groswater behavior.

An interesting group of artifacts related to this issue of rock heat were small, round beach rocks found scattered throughout the cultural Level 3 (Figure 3.59). These rocks are obviously cultural because they were imported to the site, but they are not worked in any way. At first we thought maybe they were net sinkers (Renouf 1994), but upon further reflection we now believe they are boiling stones (Odgaard 2003). Odgaard (2003) refers to an ethnographic example of the Coast Salish Indians who boiled water by placing heated beach stones into cool water. Clearly Salmon Net reflects that FCR, including beach rocks, were important parts of Groswater Palaeoeskimo heating and cooking technology.

Figure 3.55: FCR in screen.

Figure 3.56: FCR in situ.

Figure 3.57: Backdirt pile with mounds of FCR.

Figure 3.58: L3 stratigraphy, FCR layer.

Figure 3.59: Beach rocks, possible boiling stones, not in situ.

In total we found 829 artifacts, all of which are characteristically associated with Groswater Palaeoeskimos (Table 3.2). The assemblage included a typical assortment of Groswater artifacts, including box-based, side-notched endblades (Figure 3.60, A); a variety of thin, asymmetrical, side-notched bifaces (Figure 3.60, B); chipped and ground burin-like tools (Figure 3.60, C); circular, ovate and triangular sideblades (Figure 3.60, D); rectangular 'eared' and triangular scrapers (Figure 3.60, E); concave side-scrapers (Figure 3.60, F); and microblades (Figure 3.60, G). Interestingly, the Salmon Net assemblage appeared to include a stylistic mix of both "typical" and "variant" forms (described in Chapter 2) of the artifacts mentioned above. This stylistic variety was particularly apparent with regard to the endblade collection. In the upper part of cultural Level 3, we found very finely made, often ground and serrated endblades, similar to "variant" Groswater endblades (Figure 3.61, D). In lower levels of Level 3 we found a few examples of "typical" Groswater endblades (Figure 3.61, A). The majority of the endblades in the Salmon Net collection, found throughout Level 3, were stylistically distinct from both the "typical" and "variant" forms (Figure 3.61, C). Finally, we also found a few particularly small endblades (Figure 3.61, B). This apparent endblade variation, as well as the stylistic variation mentioned with regard to other tool types, will be explored and tested further in Chapter 5.

Artifact Type	n=	(%)
Abrader	1	.1
Whetstone	1	.1
Adze	9	1.1
Biface	93	11.2
Bifacially Worked Tool	94	11.3
Endblade	103	12.4
Sideblade	35	4.2
Microblade	82	9.9
Core Flake	5	.6
Core Frag/Primary Flake	33	4
Core Microblade	2	.2
Hammerstone	6	.7
Shatter/Raw Material	8	1
	3	.4
Utilized Flakes	36	4.3
Retouched Flakes	58	7
Burin-like Tool	21	2.5
Unidentified Ground Frag	10	1.2
Unidentified Ground Tool	1	.1
Organic Artifact	1	.1
Preform Biface	15	1.8
Preform Bifacially Worked Tool	17	2
Preform Endblade	21	2.5
Preform Scraper	4	.5
Preform Unknown	1	.1
Scraper End	149	18
Scraper Side	17	2
Soapstone Unknown	3	.4
TOTAL	829	99.7

Table 3.2: Salmon Net artifact count and percentages.

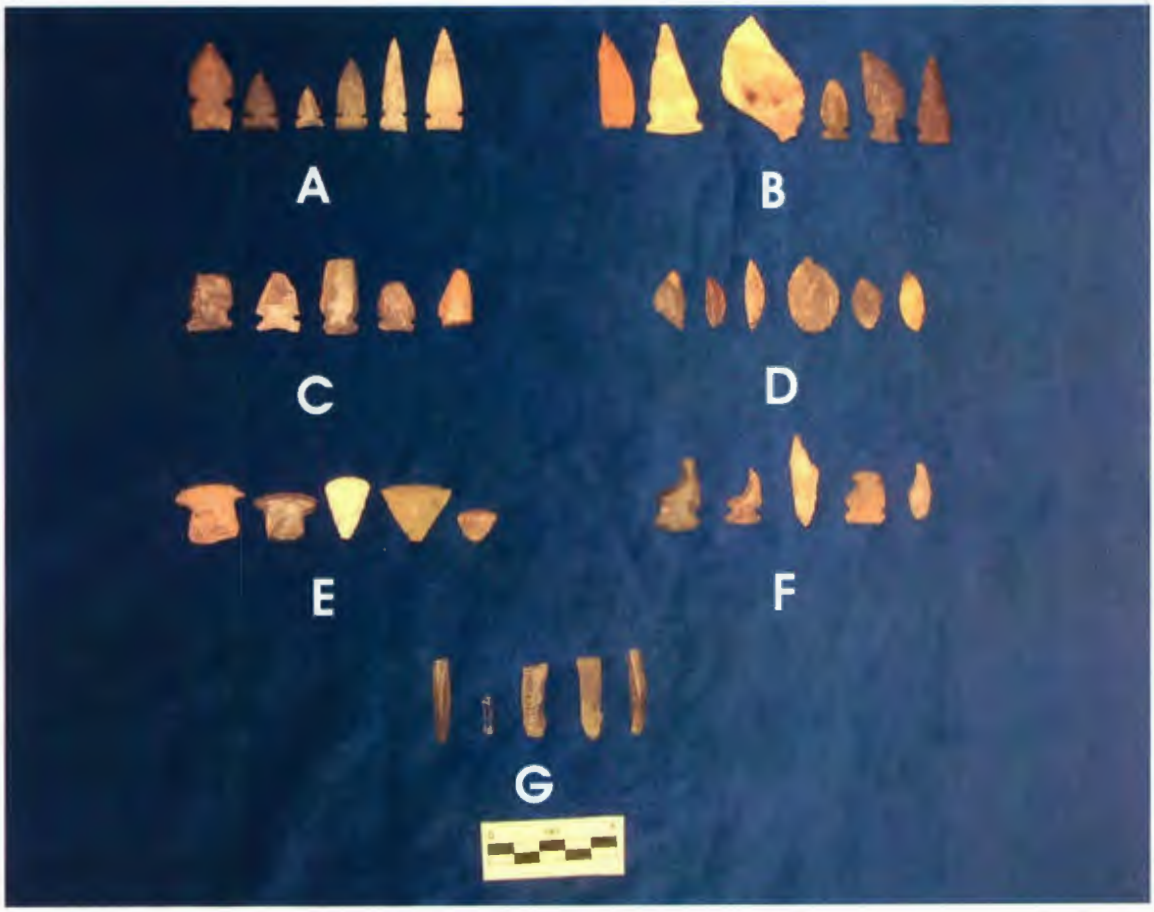


Figure 3.60: Sample of Salmon Net Groswater artifacts.

Figure 3.61: Salmon Net endblades.

We also found a number of artifacts in the Salmon Net assemblage, not typically identified in Groswater collections. For example we found four unusual scrapers/side-scrapers, including one spoke-shave (Figure 3.62); two abraders, one was fine grained and therefore probably used to grind bone and the other was coarse and probably used to grind stone (Figure 3.63); a pecked stone (Figure 3.64); a few pieces of soapstone, including one piece that was worked (Figure 3.65); a possible amulet which is roughly chipped and resembles a seal or bird (Figure 3.66); a distinct group of sideblades that are stemmed (Figure 3.67); and a group of silicified slate celts (Figure 3.68).

Four radiocarbon samples, out of 54 collected samples, were tested to determine the chronology of Salmon Net. The dates we received were 1510 +/- 70 BP, 2200 +/- 50 BP, 2420 +/- 50 BP and 3710 +/- 60 BP (Table 3.3). While these dates suggest a long period of site occupation, two (i.e. 1510 +/- 70 BP and 3710 +/- 60 BP) are well outside the accepted range of Groswater occupation in Newfoundland (i.e. 2800-1900 BP). On this basis, I judge that these two dates do not pertain to the Groswater Palaeoeskimo occupation of Salmon Net. I am confident that the other two dates (i.e. 2200 +/- 50 BP and 2420 +/- 50 BP) pertain to the Groswater occupation of Newfoundland. When 2200 +/- 50 BP and 2420 +/- 50 are calibrated (see Table 3.4 and Figure 3.69) they overlap slightly at about 2350 BP. From this information it is unclear whether Salmon Net was occupied once or whether it was consistently re-occupied for an extended period of time.

Figure 3.62: Spoke-shave.

Figure 3.63: Abraders; fine-grained (top, for bones) and coarse (bottom, for stone).

Figure 3.64: Pecked stone.

Figure 3.65: Worked soapstone.

Figure 3.66 Possible amulet; a bird or seal?

Figure 3.67: Stemmed sideblades.

Figure 3.68: Silicified slate celts.

Lab No.	Site Name and Sample	Descriptive Provenience	C14 Years, B.P., Uncalibrated
Beta – 221690	Salmon Net, EfAx-25: 220	Top of Level 3	1510 +/- 70
Beta – 221693	Salmon Net, EfAx-25: 793	Within Level 3	2420 +/- 50
Beta – 222616	Salmon Net, EfAx-25: 857	Within Level 3	2200 +/- 50
Beta – 221692	Salmon Net, EfAx-25:679	Bottom of Level 3/ Top of Level 4	3710 +/- 60

Table 3.3: Summary of radiocarbon dates from Salmon Net.

Lab No.	Site Name and Sample	Descriptive Provenience	C14 Years, B.P., Uncalibrated	C14 Years, B.P., Calibrated 1 sigma[1]	C14 Years, B.P., Calibrated 2 sigma[2]
Beta – 221693	Salmon Net, EfAx-25: 793	Within Level 3	2420 +/- 50	2680-2350	2350-2700
Beta – 222616	Salmon Net, EfAx-25: 857	Within Level 3	2200 +/- 50	2310-2150	2340-2070

Table 3.4: Radiocarbon dates associated with the Groswater occupation of Salmon Net, calibrated and uncalibrated.

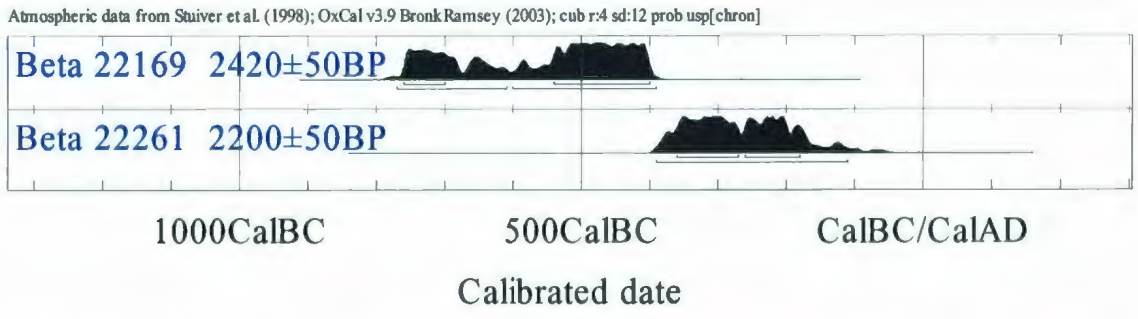


Figure 3.69: Calibrated radiocarbon dates associated with the Groswater occupation of Salmon Net (Oxcal.14v, Version 3.9 ©Bronk Ramsey 2003).

[1] M. Stuiver and P.J. Reimer 1993.
[2] M. Stuiver and P.J. Reimer 1993.

We identified structural evidence at the bottom of cultural Level 3. The structural features were described individually earlier in this report. Together they include: Features 2/13 and 10, which are mounds that delineate the structure's edges; Feature 8, which is a posthole; and Feature 14, which are divots, thought to be supportive post holes (Figure 3.70). A number of other features are thought to be associated with the structure; Feature 17, which is a natural cliff edge, is thought to form the edge of the proposed structure; Feature 12, which is a dark black, greasy soil layer, is thought to be the result of extensive hearth activity within the structure; Features 9, 15 and 16 are thought to be hearth features within the structure; Feature 7 is fire-cracked rock, again the result of hearth activity within the structure; and Feature 11 is a possible midden just outside the structure. It is unclear whether or how Feature 5, a rock mound and Feature 4, an activity area, are associated with the structure, but since they might be they are included here (Figure 3.71). We did not have time to explore the eastern edge of the structure, but based on the fact that we found the densest amount of artifacts, the thickest cultural layer and potential axial rocks in the eastern side of the excavation, we propose that the structure continued to and was bounded by the grassy incline at the eastern edge of the excavation area (Figure 3.72). From all this evidence we determined that at one time there was a semi-circular or oval structure at Salmon Net. The structural evidence identified at Salmon Net is unique in comparison with other Groswater structural evidence; however Renouf (2003) has explained that a characteristic of Groswater structural evidence is its variability.

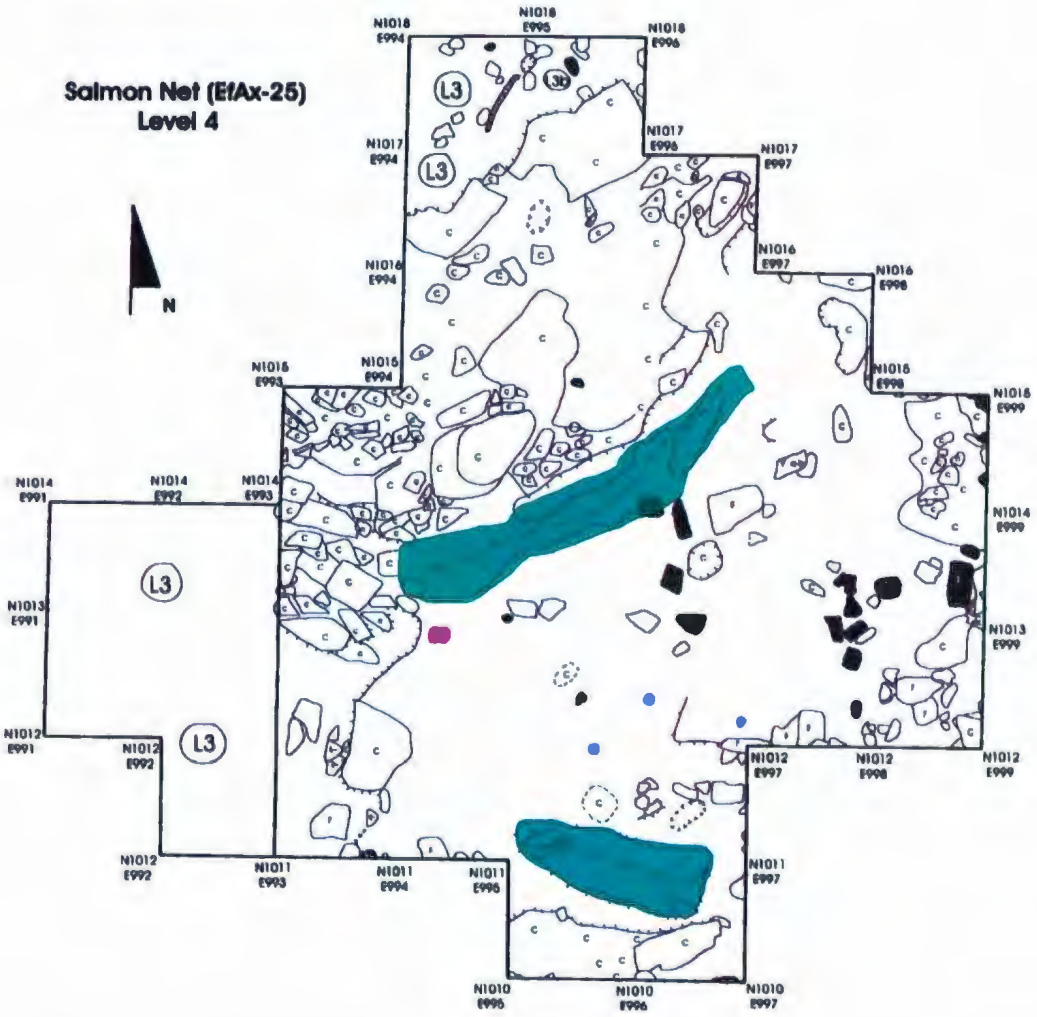


Figure 3.70: Plan map, Level 4 with structural features highlighted.

KEY[1]

Features 2/13 and 10, mounds that define the structure's edge.

Feature 8, posthole.

Feature 14, divots, possible postholes.

[1] Also see Figure 3.8, plan maps key on page 43.

Figure 3.71: Plan map of structural features and features associated with the structure.

KEY

Structural Features

- Features 2/13 and 10, mounds that define the structure's edge.
- Feature 8, posthole.
- Feature 14, divots, possible postholes.

Features Associated with the Structure

- Feature 17, natural cliff edge, suggested natural edge of the structure.
- Feature 12, greasy, black soil layer, associated with hearth activity.

Features 9, 15 and 16, hearth features.

Feature 7, fire-cracked rock.

Feature 11, possible midden.

Feature 5, a rock mound.

Feature 4, an activity area.

Figure 3.72: Slope behind the excavation, view northeast.

Structural evidence as well as the amount of FCR at the Salmon Net site suggests that it was used in the winter. If it were a winter site, people would have been heating a lot of rocks to keep themselves warm, thus accounting for such a thick layer of FCR. As mentioned earlier, the mounds which delineate the structure edge (Features 2/13 and 10) were likely constructed on the inside wall of a skin structure to keep out the draft. Furthermore, there were no rocks lining the edge of the mounds to keep down the skin edges, which suggests the possibility that snow was packed down around them instead. Informal interviews with Conche residents, as well as our own observations, provided some information about potential economic pursuits of the occupants of Salmon Net. Cyril Foley, a local fisherman, told us that the Salmon Net area was the first place from which seals are available to local hunters. This is a good location for seal hunting because it is the widest part of the harbor and thus it is where the winter ice first breaks up. Mr. Foley also said Salmon Net is a successful spot to go duck hunting in the spring. A local teacher who visited the site also told us that salmon fisherman do well fishing off Salmon Net in the spring and summer (Figure 3.73). Furthermore, during our summer excavation we observed porpoises, capelin, sea birds besides ducks, fox, and whales (Figures 3.74, 3.75 and 3.76). Clearly Salmon Net could have been and was an attractive habitation spot for Groswater Palaeoeskimos for many reasons throughout the year.

The Salmon Net excavation yielded a great deal of information that could contribute to our understanding of Groswater Palaeoeskimo material culture and lifeways. In addition its stylistically mixed lithic assemblage has great potential to contribute to our understanding of diversity within Groswater material culture. In the following chapter the Salmon Net assemblage is compared with 9 other Groswater lithic assemblages.

Figure 3.73: Salmon fishing off Salmon Net (Drouin 2004).

Figure 3.74: Eider ducks off Salmon Net (Penney 2006).

Figure 3.75: Harold the red fox visiting Salmon Net (Penney 2006).

Figure 3.76: Humpback whale off Salmon Net (Penney 2006).

Chapter 4

Salmon Net and other Groswater Assemblages

Introduction

This chapter includes a description of each of the Groswater sites and assemblages considered for comparative purposes in this investigation (see Figure 1.2). Since the objective is to compare Groswater material culture, there is a particular emphasis on describing each site's assemblage(s) in terms of the six categories of tools mentioned in Chapter 2. The data from each of the sites will be synthesized at the end of the chapter to show their similarities and differences.

Groswater Sites and Assemblages

Salmon Net (EfAx-25)

The Salmon Net site and excavation were described in detail in the previous chapter; however, I will review some of the key points to make a clearer comparison with the other Groswater sites and assemblages. Salmon Net is the only excavated Groswater site on the east coast of the Northern Peninsula of Newfoundland. It is located about a thirty-minute hike south of the town of Conche on the west side of the Fox Head Peninsula. The site itself is located on a set of terraces overlooking the mouth of Conche Harbour, 11-16 m above sea level. Drouin first located and identified the site in 2004, during a survey of the area. In total 38 m^2 were excavated, 31 m^2 down to sterile. The excavation yielded 829 lithic artifacts, lithic debitage, fire-cracked rock and 17 features. Features included: a flake concentration, a structure outline defined by mounds and

gullies and stained black soil, naturally occurring cliffs which could have served as site boundaries, an activity area, an unusual rock cluster, a cluster of fire-cracked rock, a post hole, possible hearth features, a midden, and divots which could have also been post holes. Fifty-four charcoal samples were recovered, and from those, four radiocarbon dates were obtained: 1510 +/- 70, 2420 +/- 50, 2200 +/- 50, 3710 +/- 60 (Table 3.3). Two dates are within the accepted Groswater time-period (2800-1900 BP) (Renouf 2005), while the other two are outside the accepted time limits. The two dates outside the accepted Groswater occupation time limits may be anomalous, thus they are ignored here. Salmon Net is hypothetically a cold-season site, based primarily on structural evidence as well as the quantity of FCR and hearth activity. However, resource availability suggests that Salmon Net could have been occupied throughout the year. Local knowledge of the resources around Salmon net inform us that seals would have been available to people in the late winter/early spring and ducks and salmon would have been available in the spring and summer.

The Salmon Net assemblage was identified as a Groswater assemblage, based on the presence of characteristic Groswater tool attributes (Figure 4.1). However, unlike most Groswater assemblages, the Salmon net assemblage appeared to include examples of both stylistically "typical" and "variant" artifacts (Figure 4.2). In addition, there were a number of endblades that do not stylistically correspond with either the "typical" or "variant" categories of Groswater endblades described in Chapter 2 (Figure 4.3). The Salmon Net lithic assemblage includes:

Artifact Type	Quantity
Endblade Total	**103**
Side-notched endblades	73
Un-notched endblades	29
Biface Total	**93**
Side-notched biface	43
Stemmed biface	6
Biface fragment	44
Burin-like tool Total	**32**
Trapezoidal	13
Triangular	1
Rectangular	5
Burin-like tool fragment	13
Sideblade Total	**35**
Semi-lunar	13
Ovate	16
Triangular	5
Circular	1
Sideblade fragment	0
Endscraper Total	**149**
Eared	19
Pulled edge	61
Other	69
Sidescraper Total	**17**
On a BLT	5
Crescent-shaped	8
Other	4

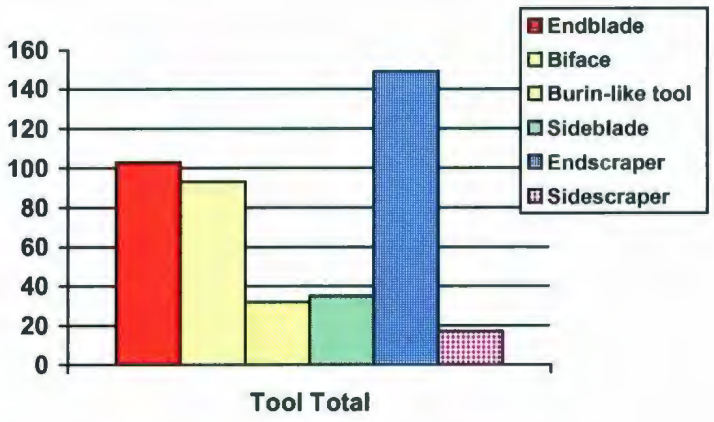


Table and Chart 4.1: Salmon Net artifact data.

Figure 4.1: Salmon Net endblades; variant (A and B) and typical (C and D).

Figure 4.2: Salmon Net endblades; variant (A and B), small (C and D), un-notched (E), neither typical nor variant (F, G and H), typical (I and J).

Figure 4.3: Salmon Net toolkit; bifaces (A-C), burin-like tools (D and E), sideblades (F-H), variant endblades (I and J), sidescrapers (K and L), small endblades (M and N), un-notched endblade (O), neither typical nor variant endblades (P-R), eared scrapers (S and T), typical endblades (U and V), pulled edge scrapers (W and X).

Phillip's Garden East (EeBi-1)

Phillip's Garden East is on the Point Riche Peninsula, on the west coast of the Northern Peninsula of Newfoundland. It is on the same terrace as Phillip's Garden, a Dorset Palaeoeskimo site, and a few hundred meters to the east of Phillip's Garden West, another Groswater Palaeoeskimo site. The site is approximately 12 m above sea level and covers an area of about 1500 m^2. The site was discovered in 1984 after systematic test pitting, and 4 m^2 were initially excavated. Over three field seasons, a total area of 127 m^2 was excavated. During the excavations over 2,700 lithic artifacts, 74 bone, antler or ivory artifacts, around 75,000 animal bones and over 35,000 flakes were found. Renouf (1994) identified two house structures and six pit features at the site. Renouf (1994; 2005) conjectured that there were two occupations, based on stratigraphy and the jumbled nature of faunal and lithic material. She refers to the earlier occupation as PGE1, and dates it to approximately between 2800 and 2300 BP. The later occupation is referred to as PGE2 and is dated to approximately 2500 and 2200 BP. Based on faunal data Renouf (1994; 2005) concludes that Phillip's Garden East was occupied seasonally to hunt seal.

The Phillip's Garden East assemblage plays a significant role in this investigation since Renouf (2005) identified it as the archetype of stylistically "typical" Groswater material culture in Newfoundland. Other assemblages will be compared against Phillip's Garden East in Chapter 5 to determine if they also yield stylistically "typical" material culture. The Phillip's Garden East assemblages include the following, based on analytical data used for Renouf (2005):

PGE1

Artifact Type	Quantity
Endblade Total	**105**
Side-notched endblades	69
Un-notched	0
Endblade fragments	36
Biface Total	**150**
Notched bifaces	24
Stemmed bifaces	26
Biface other, fragments	100
Burin-like tool Total	**47**
Trapezoidal	5
Triangular	5
Rectangular	13
Burin-like tool fragment	24
Sideblade Total	**28**
Semi-lunar	1
Ovate	11
Triangular	1
Circular	1
Sideblade fragments	14
Endscraper Total	**73**
Eared	27
Pulled edge	9
Other	37
Sidescraper Total	**20**
On a BLT	3
Crescent-shaped	15
Other	2

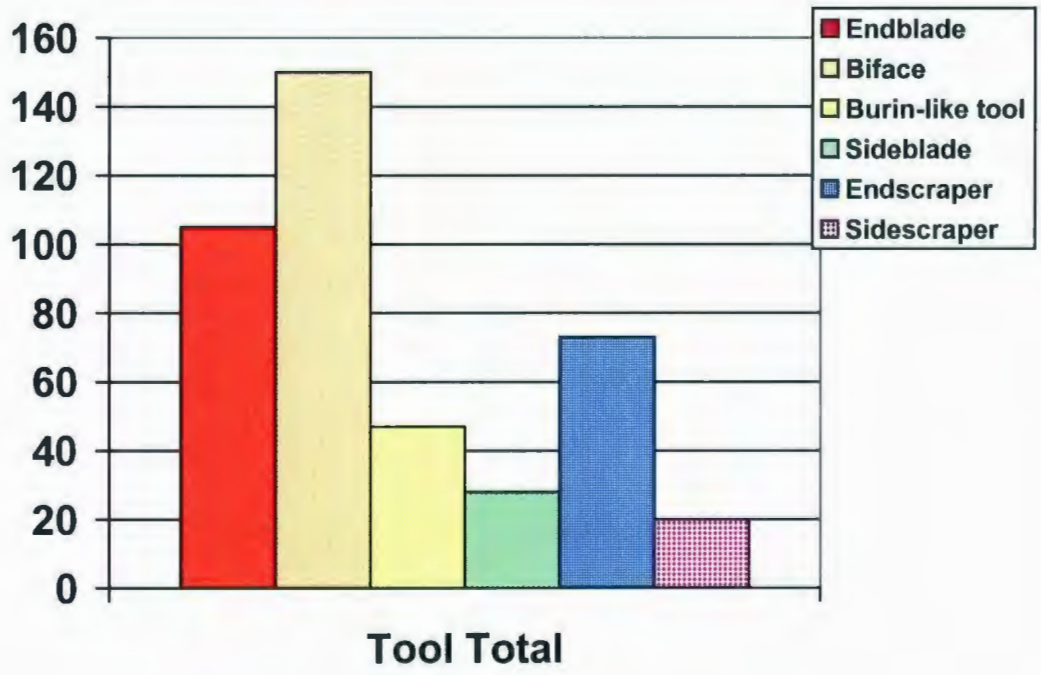


Table and Chart 4.2 Phillip's Garden East 1 artifact data.

PGE2

Artifact Type	Quantity
Endblade Total	**150**
Side-notched endblades	100
Un-notched endblades	19
Endblade fragments	31
Biface Total	**157**
Side-notched biface	53
Stemmed biface	28
Biface fragment	76
Burin-like tool Total	**81**
Trapezoidal	29
Triangular	4
Rectangular	20
Burin-like tool fragment	28
Sideblade Total	**41**
Semi-lunar	1

Ovate	15
Triangular	0
Circular	0
Trapezoidal	2
Sideblade fragment	23
Endscraper Total	**133**
Eared	22
Pulled edge	13
Other	98
Sidescraper Total	**13**
On a BLT	1
Crescent-shaped	12
Other	0

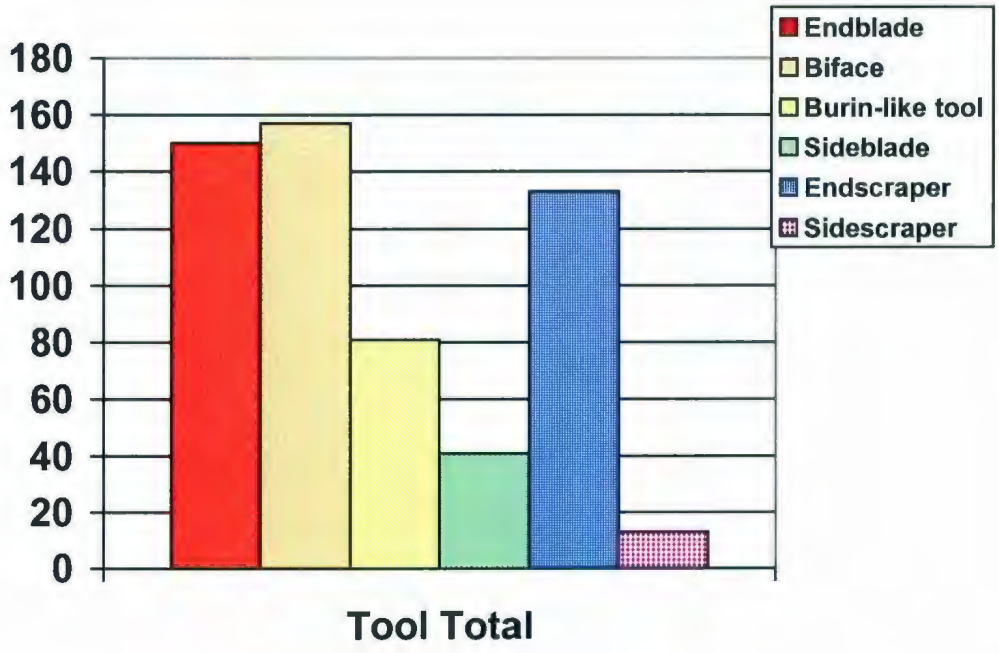


Table and Chart 4.3: Phillip's Garden East 2 artifact data.

Figure 4.4: Phillip's Garden East toolkit; bifaces (A and B), endblades (C and D), sideblades (E and F), burin-like tools (G and H), endscrapers (J and K), sidescrapers (I and L).

Factory Cove (DlBk-3)

Factory Cove is on the Cow Head Peninsula, on the west coast of the Northern Peninsula of Newfoundland (Auger 1985; 1986). A total of 1,300 artifacts and just over 87,000 flakes were found during excavations (Auger 1985; 1986). Auger (1985) documented faunal remains from 13 species; harp seals dominated the collection. He also found evidence of structures at the site: a slightly subterranean house, a mid-passage hearth structure, a lean-to and a tent circle. Five radiocarbon samples were tested to determine chronology. The results were: 2100 +/-60 BP, (Beta 4046), 2270 +/- 100 BP (UQ 409), 2530 +/-280 BP (UQ 413), 2700 +/-140 BP (Beta 4047), 10960 +/- 140 BP (UQ 407). Auger (1985) dismissed the date 10960 +/- 140 BP since is too old for Groswater occupation in Newfoundland. Based on the four acceptable dates Auger projected that multiple occupations took place at the site over a six hundred year period (2700-2100 BP). Factory Cove yielded primarily season-specific faunal material, suggesting a late winter to early-summer occupation. However, Auger (1985) proposed that Factory Cove was occupied year-round based on a diverse collection of artifacts, the large variety of structures and the fact that some faunal remains were from animals that could have been hunted outside of late-winter to early-summer season.

Factory Cove was one of the first, and largest Groswater sites ever excavated. In turn it has served as a foundation for our recognition and understanding of Groswater Palaeoeskimo material culture, particularly here in Newfoundland. Auger's (1985; 1986) description of most of the tools in the Factory Cove assemblage associate them stylistically to "typical" Groswater material culture. However, he described some

stylistic variation with regard to Factory Cove endblades. Auger (1985: 86; 1986:113-115) and Leblanc (1996: 64) both noted that some Factory Cove endblades were stylistically similar to "typical" Groswater endblades, with a large box bases, but there were also a significant proportion that were smaller, with a smaller base. These impressions of the Factory Cove collection are tested in the next chapter. The data presented in this investigation for this site was collected by this researcher, after receiving permission to view the collection which is currently housed in The Rooms Provincial Museum. A small number of artifacts were on display at the museum and thus not included in this investigation. The Factory Cove assemblage considered for this investigation includes:

Artifact Type	Quantity
Endblade Total	**85**
Side-notched endblades	58
Un-notched endblades	11
Endblade fragments	16
Biface Total	**147**
Notched bifaces	39
Stemmed bifaces	37
Biface other, fragments	71
Burin-like tool Total	**37**
Trapezoidal	11
Triangular	3
Rectangular	8
Burin-like tool fragment	15
Sideblade Total	**12**
Semi-lunar	0
Ovate	5
Triangular	1
Circular	0
Sideblade fragment	6
Endscraper Total	**100**

Eared	33
Pulled edge	10
Other	67
Sidescraper Total	**4**
On a BLT	1
Crescent-shaped	2
Other	1

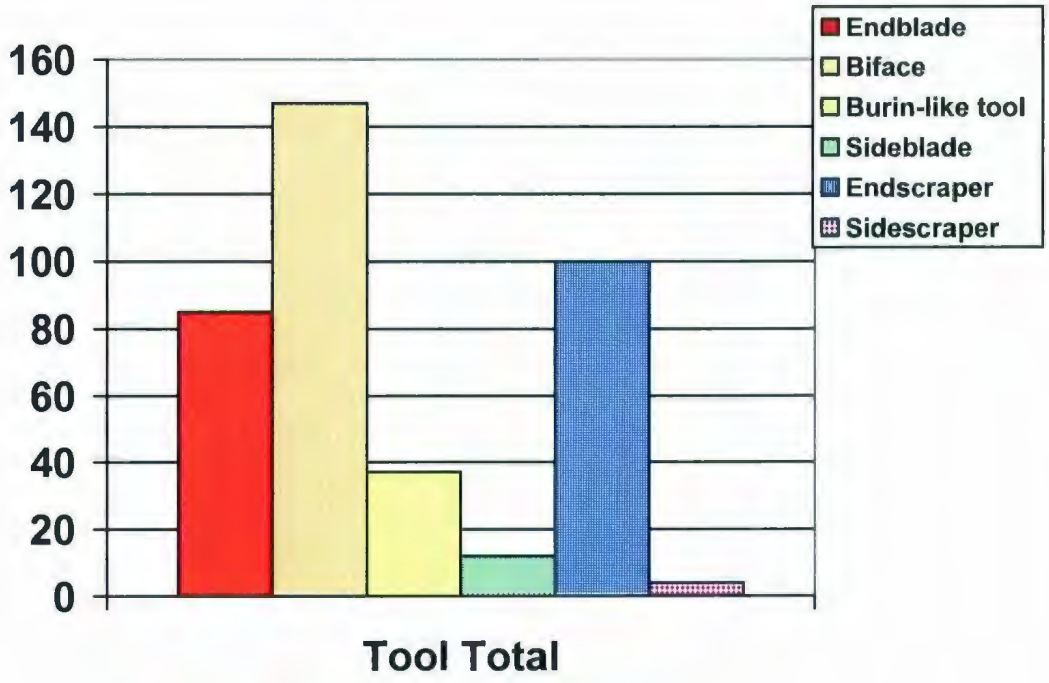


Table and Chart 4.4: Factory Cove artifact data.

Figure 4.5: Factory Cove toolkit; endscrapers (A-C), burin-like tool (D), sideblades (E-G), sidescraper (H), endblades (I-M), bifaces (N-R). From the collections of The Rooms, Provincial Museum.

Phillip's Garden West (EeBi-11)

Phillip's Garden West is located on the Point Riche Peninsula, on the west coast of the Northern Peninsula of Newfoundland. The site covers a 500 m^2 exposed terrace, 13 m above sea level. It is located a few hundred meters west of Phillip's Garden, and Phillip's Garden East. Fitzhugh (1983) located the site in 1982, and the Port au Choix Archaeology Project returned to test it in 1984 (Renouf 1985) and excavate it from 1990-1992 (Renouf 1991, 1992). Renouf (1994) originally believed that the data she uncovered from Phillip's Garden West was going to be similar to that recovered from Phillip's Garden East, but that was not the case. The cultural level at Phillip's Garden West was relatively bare (i.e. there were fewer artifacts and lithic debitage recovered), particularly in comparison to Phillip's Garden East. Furthermore, the artifacts from Phillip's Garden West were different from anything that had ever been uncovered from a Groswater site. For example, the endblades were very finely made, some were serrated and a couple had double side notching. Uncalibrated radiocarbon dates suggest there were at least two occupations of the site; referred to as PGW1 (older) and PGW2 (younger). The area that is associated with the PGW1 occupation includes steep hillside midden deposits just below the terrace. There were a number of midden deposits and one activity area tested in this PGW1 zone, generating a range of radiocarbon dates; however, most of the PGW1 lithics derived from contexts dating to between 2500 and 2300 BP. PGW2 was located on the actual terrace. Renouf explains (2005) that there were fewer artifacts and flakes from PGW2 than the PGW1 zone. Furthermore, there was no bone material or fire-cracked rock. She did, however, identify some features; including a

dwelling enclosed by a ring of five small post holes, a hearth inside the dwelling, three other poorly defined hearths outside the dwelling and one unusual spiral rock structure. Uncalibrated radiocarbon dates from PGW2 suggest the occupation period was 2350-2000 BP. After considering a number of explanations for the unusual archaeological features uncovered at Phillip's Garden West, Renouf (1994; 2005) postulated that the site's significance pertains to hunting ritual.

Phillip's Garden West is an exceptional Groswater site, both in terms of the site makeup and location, and especially in terms of the assemblage. Significantly, the collection includes not just one class of atypical tools (i.e. endblades), but a whole array; including, bifaces, burin-like tools, sideblades, endscrapers and sidescrapers. Phillip's Garden West "variant" tools have been identified in other Groswater collections (Ryan 1997; Renouf 2005); however other assemblages only have samples of these exceptional artifacts, whereas the whole Phillip's Garden West collection is exceptional. The Phillip's Garden West assemblage plays a significant role in this investigation. Since it is the only identified stylistically "variant" assemblage in Newfoundland and Labrador (Renouf 2005), other assemblages will be compared against it to determine if they also yield stylistically "variant" material culture. The Phillip's Garden West assemblages include the following, based on analytical data used for Renouf (2005):

PGW1

Artifact Type	Quantity
Endblade Total	**152**
Side-notched endblades	87
Un-notched endblades	23
Endblade fragments	42
Biface Total	**233**
Notched bifaces	26
Stemmed bifaces	60
Biface other, fragments	147
Burin-like tool Total	**41**
Trapezoidal	14
Triangular	9
Rectangular	2
Burin-like tool fragment	16
Sideblade Total	**48**
Semi-lunar	21
Elongated	8
Ovate	1
Triangular	2
Circular	0
Sideblade fragment	16
Endscraper Total	**59**
Eared	2
Pulled edge	13
Other	44
Sidescraper Total	**4**
On a BLT	1
Crescent-shaped	2
Other	1

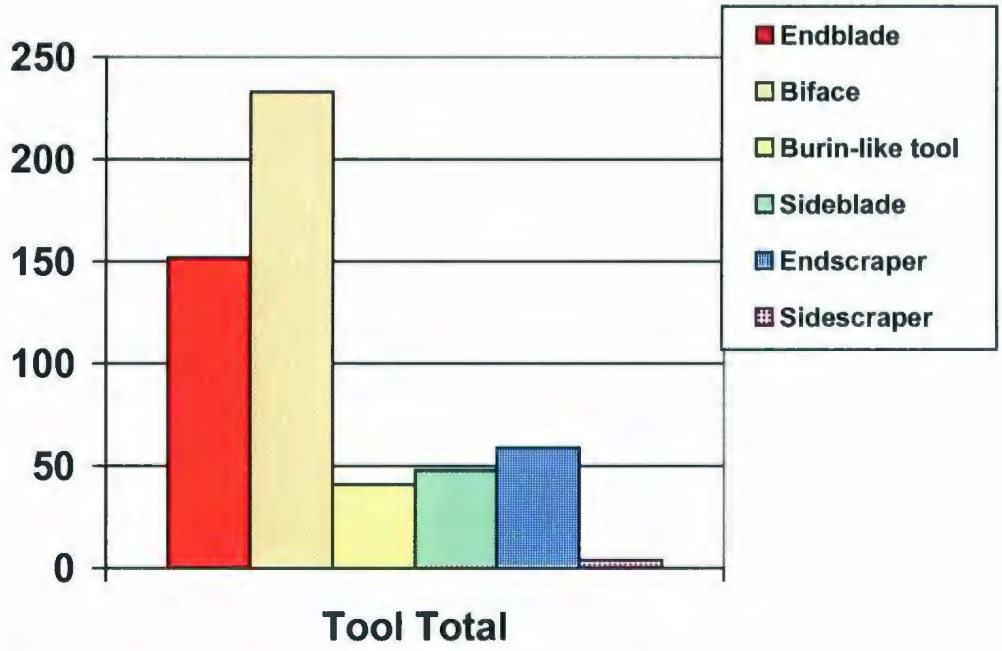


Table and Chart 4.5: Phillip's Garden West 1 artifact data.

PGW2

Artifact Type	Quantity
Endblade Total	**84**
Side-notched endblades	52
Un-notched endblades	7
Endblade fragments	25
Biface Total	**74**
Notched bifaces	18
Stemmed bifaces	23
Biface other, fragments	33
Burin-like tool Total	**28**
Trapezoidal	8
Triangular	7
Rectangular	6
Burin-like tool fragment	7
Sideblade Total	**57**
Semi-lunar	31
Elongated	2
Ovate	3
Triangular	5

Circular	0
Sideblade fragment	16
Endscraper Total	**54**
Eared	3
Pulled edge	10
Other	41
Sidescraper Total	**4**
On a BLT	1
Crescent-shaped	2
Other	1

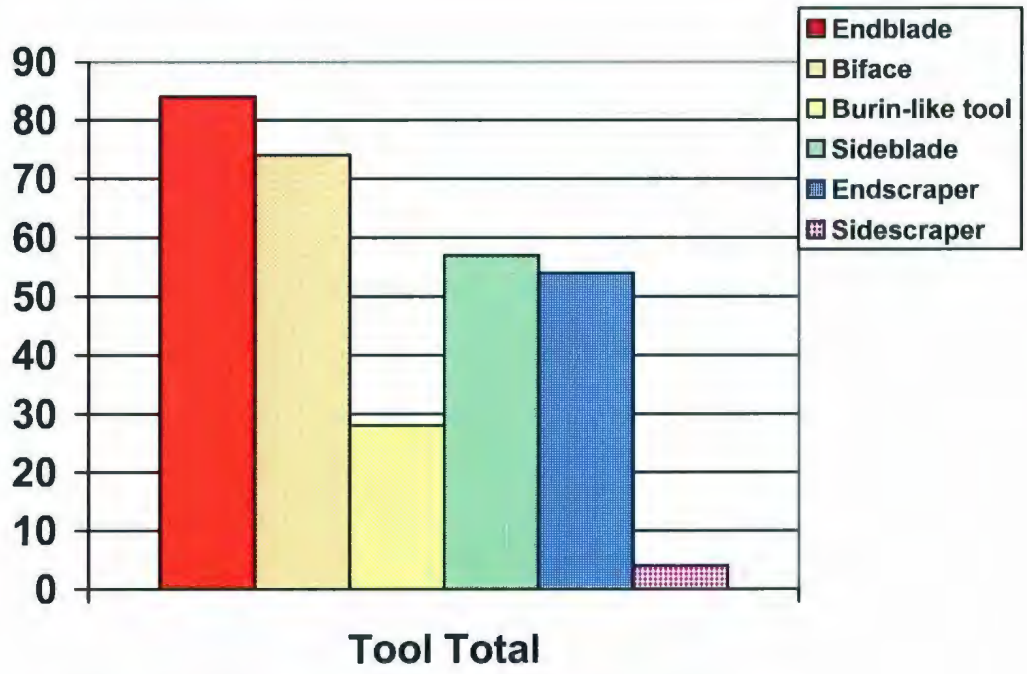


Table and Chart 4.6: Phillip's Garden West 2 artifact data.

Figure 4.6: Phillip's Garden West toolkit; bifaces(A and B), endblades (C-E), burin-like tools (F and I), sideblades (G and H), sidescrapers (J and N), endblades (K-M).

Party Site (EeBi-30)

The Party Site is located on the southern shore of Back Arm, which is a sheltered cove between the Port au Choix Peninsula and the mainland, on the Northern Peninsula of Newfoundland. It is about 5 km away from Phillip's Garden East and Phillip's Garden West. Survey work was carried out at the site in 2000 and 2001 (Renouf 2002; Renouf and Bell 2001, 2002), and an excavation took place in 2003, which yielded primarily Groswater Palaeoeskimo material culture (Wheatley 2004). Two areas (Area 1 and Area 2) were excavated in 2003; however, for this investigation, the assemblage is treated as one because there are so few artifacts. The excavation was carried out in a wooded area, on a terrace above the beach, about 4-6 m above sea level. In total 48 m^2 were excavated and Wheatley (2004) identified five features over two excavation areas. The features included two hearths (one a possible burning area), two flake concentrations, and a midden. Wheatley obtained three radiocarbon dates for the site, 2710+/-40 BP (Beta 183603), 2460+/-70 BP (Beta 183604), and 2570+/-60 BP (Beta 146666). Wheatley (2004) interpreted two separate occupations at the Party Site; Area 1 was interpreted as a summer occupation site where people relied on local flora and fauna and Area 2 was interpreted as a late spring/early summer occupation site where people relied on the harbor seal hunt.

The Party Site assemblage is relatively small. In total, 377 artifacts and 14218 flakes were recovered. Wheatley's (2004) description of the artifacts suggests that most are stylistically similar to "typical" artifacts. The artifacts that are relevant to this investigation include:

Artifact Type	Quantity
Endblade Total	**10**
Side-notched endblades	8
Un-notched endblades	2
Endblade fragments	0
Biface Total	**20**
Notched bifaces	6
Un-notched/Stemmed bifaces	5
Biface other, fragments	9
Burin-like tool Total	**6**
Trapezoidal	0
Triangular	2
Rectangular	2
Burin-like tool fragment	2
Sideblade Total	**2**
Semi-lunar	1
Ovate	1
Triangular	0
Circular	0
Sideblade fragment	0
Endscraper Total	**10**
Eared	2
Pulled edge	1
Other	7
Sidescraper Total	**0**
On a BLT	0
Crescent-shaped	0
Other	0

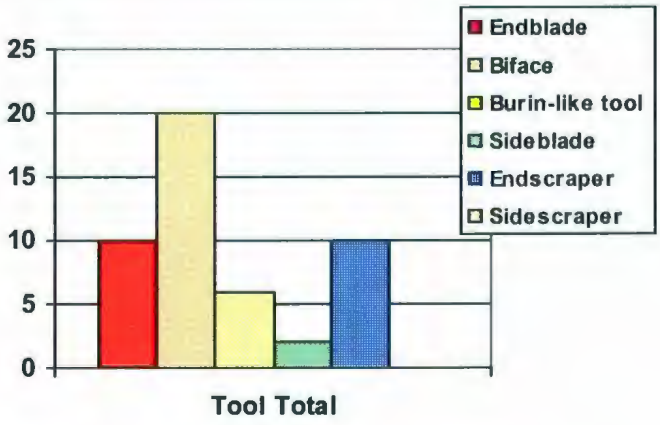


Table and Chart 4.7: The Party Site artifact data.

Figure 4.7: Party Site toolkit; burin-like tools (A and B), endblades (C-E), endscrapers (F and G), sideblades (H and I), bifaces (J-L).

Peat Garden (EgBf-6)

Peat Garden is located on the north side of a long narrow arm, locally known as "long bottom" in the southern section of the town of Bird Cove, on the west coast of the Northern Peninsula of Newfoundland. The site was excavated from 1997-2001, and contained material from two cultural occupations: Groswater Palaeoeskimo and Cow Head complex Recent Indian (Hartery and Rast 2001, 2002). The site is located 4.5-5 m above sea level. In total, 20 m^2 were excavated and researchers recovered lithic and bone artifacts, faunal material, teeth and debitage. Three features were also identified, including two fire-heated rock scatters and one hearth and flake concentration. The site has been dated to between 2210-1735 BP, based on five radiocarbon dates: 2210+/-40 BP (Beta 142067), 2120+/-40 BP (Beta 142066), 2050+/-70 BP (Beta 110141), 1938+/-65BP (BGS 2252), and 1753+/-45BP (BGS 2253). Faunal evidence suggests that Peat Garden was occupied in the late spring/early summer (Murray 2000).

Hartery and Rast (2001, 2002) described the Peat Garden assemblage as stylistically mixed; containing both "typical" and "variant" artifacts. They also expressed the fact "that with each new Groswater Palaeoeskimo site investigated the variability in their toolkits increases" (Hartery and Rast 2001: 29). In other words Hartery and Rast (2001) noticed that material culture variability seems to be a significant aspect of Groswater society, which supports this current research. The data presented in this investigation was collected by this researcher, upon receiving permission to view the Peat Garden collection which is currently housed in The Rooms Provincial Museum. A small

number of artifacts were on display at the museum and thus not included in this investigation. The assemblage I viewed included:

Artifact Type	Quantity
Endblade Total	**16**
Side-notched endblades	6
Un-notched endblades	6
Endblade fragments	4
Biface Total	**20**
Notched bifaces	18
Stemmed bifaces	0
Biface other, fragments	2
Burin-like tool Total	**12**
Trapezoidal	3
Triangular	0
Rectangular	3
Burin-like tool fragment	6
Sideblade Total	**2**
Semi-lunar	1
Ovate	1
Triangular	0
Circular	0
Sideblade fragment	0
Endscraper Total	**10**
Eared	2
Pulled edge	3
Other	5
Sidescraper Total	**2**
On a BLT	2
Crescent-shaped	0
Other	0

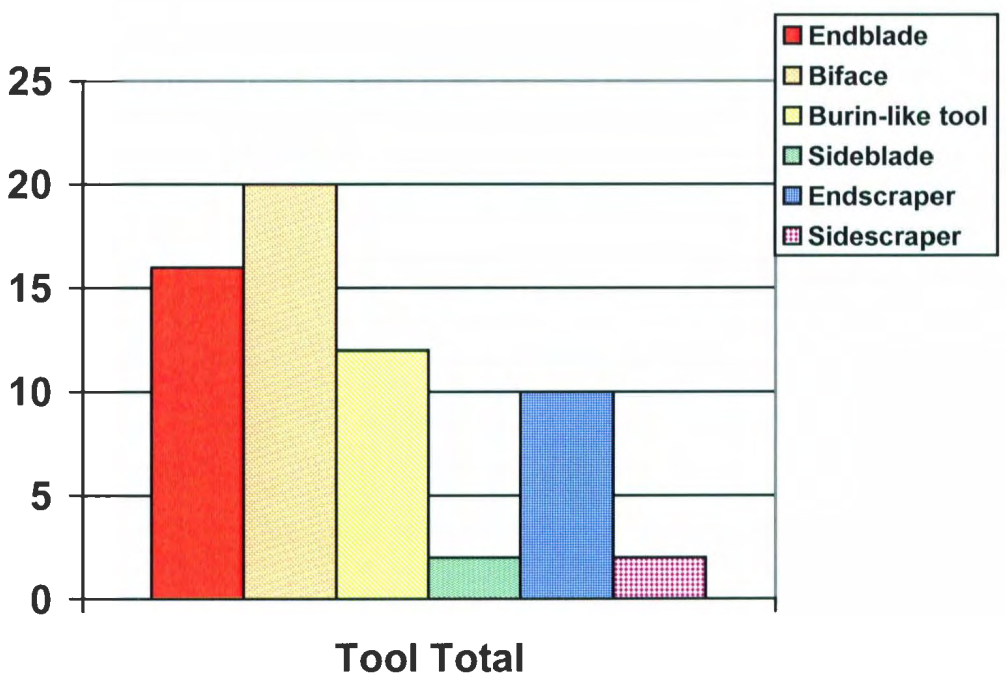


Table and Chart 4.8: Peat Garden artifact data.

Figure 4.8: Peat Garden toolkit; endscrapers (A-C), burin-like tools (D and E), sidescrapers (F and G), endblades (H-L), sideblades (N and O), bifaces (M, P and Q-T). From the collections of The Rooms Provincial Museum.

Cow Cove 1 (EaBa-14)

Cow Cove 1 is located at the end of a kilometer long peninsula that juts out into Coachman's Cove Harbour, situated on the north coast of Newfound on the Baie Verte Peninsula. Erwin (2000; 2003) explained that the site is located in a wooded area about 40 m northwest of the shoreline, 5 m above sea level, in the middle of a cove. It was identified after systematic test pitting in 1999 and a 16 m^2 excavation took place the following summer (Erwin 2000). A total of 77 artifacts was recovered and six features were identified (Erwin 2000; 2003). The features included a hearth, two pits with two associated mounds, and a compacted sitting or sleeping area. No faunal remains were preserved at Cow Cove; however, based on an interpretation of site location and architectural remains Erwin (2000; 2003) suggested that the site was occupied short-term during warm-weather and the occupants likely exploited interior resources.

The Cow Cove collection is small, but of particular interest because it is the only comparative site located on the north, central coast of Newfoundland. The collection appears to include a stylistic mix of "typical" and "variant" Groswater tools, and there seem to be more of the latter. The collection I looked at included:

Artifact Type	Quantity
Endblade Total	**16**
Side-notched endblades	7
Un-notched endblades	4
Endblade fragments	5
Biface Total	**16**
Notched bifaces	4
Stemmed bifaces	2
Biface other, fragments	9
Burin-like tool Total	**3**
Trapezoidal	2

Triangular	0
Rectangular	1
Burin-like tool fragment	0
Sideblade Total	**4**
Semi-lunar	1
Ovate	0
Triangular	1
Circular	0
Sideblade fragment	2
Endscraper Total	**17**
Eared	2
Pulled edge	4
Other	11
Sidescraper Total	**2**
On a BLT	0
Crescent-shaped	1
Other	1

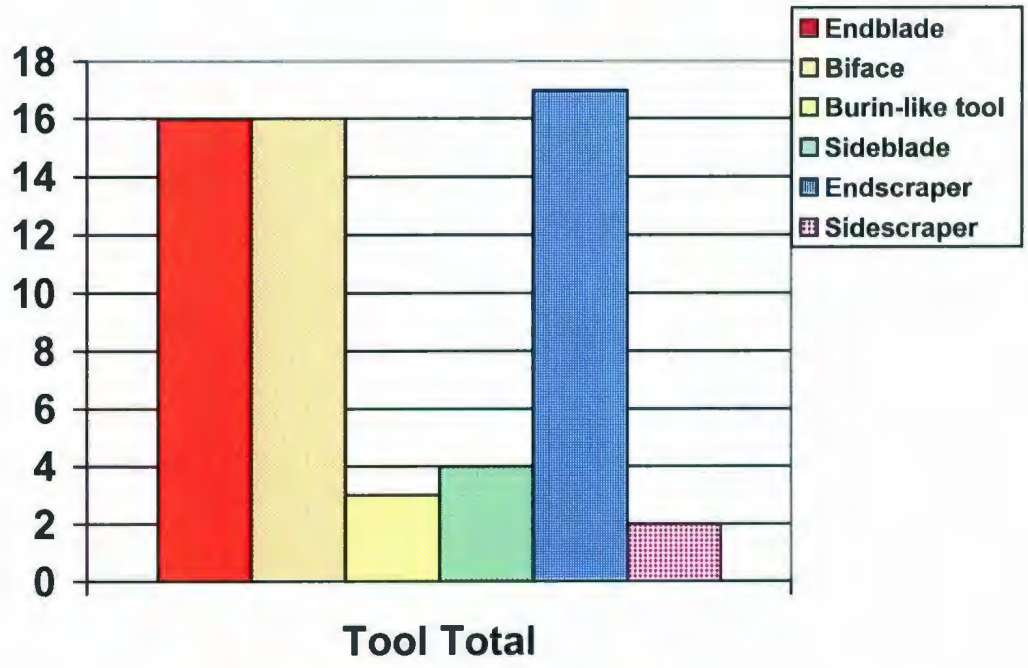


Table and Chart 4.9: Cow Cove 1 artifact data.

Figure 4.9: Cow Cove toolkit; endblades (A-C), burin-like tool (D), sidescraper (G) endscrapers (E and F), sideblade (H), bifaces (I-K).

Cow Head (DlBk-1)

The Cow Head site is located in the town of Cow Head, a small enclave village within Gros Morne National Park on the west coast of the Northern Peninsula of Newfoundland. The site was likely on an island when Groswater people were living there, but due to isostatic rebound and resulting declining relative sea levels it is now connected to the mainland (Hartery 2001). Currently the site is located on an upper and lower terrace between a garden and an embankment. Tuck excavated the site in 1976 and 1978 and identified both Cow Head complex Recent Indian cultural material as well as Groswater Palaeoeskimo cultural material (Tuck 1987). There are eight distinct bands of ancient humus at the site, and each reflects a period of stability and human occupation (Hartery 2001). Groswater material culture was identified in Bands 5 (most productive) and 6, on both the upper and lower terraces. Tuck (1987) identified a number of features from Bands 5 and 6, including hearths and amorphous concentrations of rocks. Radiocarbon dates for the site include 2010 +/- 80 BP (Beta 4364), 2480 +/-110, 2410 +/-70, 2805 +/-130 and 2845 +/-120. Archaeologists contend that the primary function of Cow Head was a workshop, used sequentially by Maritime Archaic, Groswater and Dorset Palaeoeskimos and Cow Head Complex Recent Indians (Hartery 2001; Leblanc 1996; Tuck 1987). This was deduced based on the fact that the Cow Head site is located at the Cow Head chert source, as well as the fact Cow Head assemblages tend to yield lithic evidence commonly associated with tool processing (Hartery 2001; Leblanc 1996; Tuck 1987).

The Cow Head assemblage associated with Groswater Palaeoeskimo occupation of the site is small. My initial impression of it is that most of the artifacts are neither stylistically "typical" nor "variant". The collection studied at included:

Artifact Type	Quantity
Endblade Total	**6**
Side-notched endblades	4
Un-notched endblades	2
Endblade fragments	0
Biface Total	**17**
Notched bifaces	2
Stemmed bifaces	5
Biface other, fragments	10
Burin-like tool Total	**0**
Trapezoidal	0
Triangular	0
Rectangular	0
Burin-like tool fragment	0
Sideblade Total	**3**
Semi-lunar	2
Ovate	1
Triangular	0
Circular	0
Sideblade fragment	0
Endscraper Total	**6**
Eared	1
Pulled edge	2
Other	3
Sidescraper Total	**3**
On a BLT	0
Crescent-shaped	0
Other	3

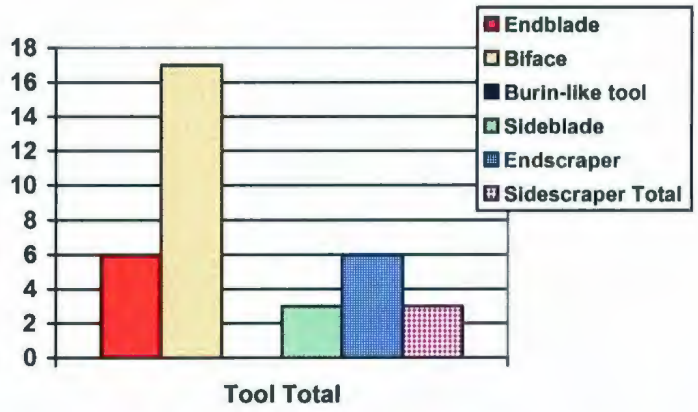


Table and Chart 4.10: Cow Head artifact data.

Figure 4.10: Cow Head toolkit; endscrapers (A and B), sideblade (C), sidescrapers (D and E), endblades (F-H), bifaces (I and J).

Data Compilation and Summary

Site location, function, chronology and assemblage composition information from the nine Groswater sites described above are summarized in this section to clarify the sites' similarities and differences. These data will be compared in Chapter 6 to try and explain why material culture stylistic variability occurs amongst Newfoundland Groswater assemblages.

According to Table 4.11, there is variation among the nine sites considered here with regard to location, function and chronology. Most of the sites are located on the west coast of the Northern Peninsula of Newfoundland. The exceptions are Cow Cove (CC) located on the northeast coast of Newfoundland and Salmon Net (SN), which is located on the east coast of the Northern Peninsula of Newfoundland. About half the sites are located on a headland, while the other half are located in inner coves. Most of the sites, except for CC and Factory Cove (FC), are designated as hunting camps. CC is designated a workshop site and FC is designated both a hunting site and a workshop site. It is significant to note that sites located on a headland are typically associated with the exploitation of marine animals (primarily seal) (Auger 1985; Melnik 2007; Renouf 2005; Wells 2002), while sites located in inner coves are typically linked with combined interior and maritime resource exploitation (Erwin 2000; Loring and Cox 1986; Wheatley 2004). The exception to this Peat Garden (PG), which is located in an inner bay but researchers believe the site occupants primarily hunted marine resources (Hartery and Rast 2002; Murray 2000). Site seasonality generally corresponds with resource availability; winter/spring occupancy is generally linked with marine resource

Site	Region	Location	Inferred Function	Inferred Seasonality	Chronology C^{14} years BP
Phillip's Garden East 1 (PGE1)	West Coast NP	Headland	Seal hunting site	Late winter/early spring	2760+/-90 2660+/-70 2510+/-90 2370+/-160 2320+/-100 (1930+/-140)[1] (1910+/-150) (1730+/-200)
Phillip's Garden East 2 (PGE2)	West Coast NP	Headland	Seal hunting site	Late winter/early spring	2500+/-60 2420+/-110 2350+/-100 2350+/-90 2310+/-90 2260+/-70 2240+/-100
Factory Cove (FC)	West Coast NP	Headland	Hunting camp – primarily seal, also interior resources/works hop site	Primarily spring-all year?	2100 +/-60 2270 +/- 100 2530 +/-280 2700 +/-140
Party Site (PS)	West Coast NP	Inner cove	Hunting camp – maritime plus interior resources	Spring and Summer	2710+/-40 2570+/-60 2460+/-70
Salmon Net (SN)	East Coast NP	Headland	Hunting camp – maritime resources	Winter/spring into summer?	(1570+/-70) 2420+/-50 2200+/-50 (3710+/-60)[2]
Peat Garden (PG)	West Coast NP	Inner cove	Hunting camp – primarily maritime, some interior	Spring/summer	2210+/-40 2120+/-40 2050+/-70 1938+/-65 1735+/-45
Cow Cove (CC)	Northeast Coast NL	Inner cove	Hunting camp – primarily interior resources	Warm weather	None
Cow Head (CH)	West Coast NP	Inner cove	Workshop site	Year-round	2885+/-120 2805+/-130 2480+/-110 2010+/-80
Phillip's Garden West 1 (PGW1)	West Coast NP	Headland	Hunting camp – primarily seal/ritual?	Late winter/early spring	2540+/-60 2460+/-120 2340+/-100 2340+/-70 2240+/-70 1960+/-80

[1] Researcher thinks these three recent dates are associated with the Dorset occupation of Phillip's Garden.
[2] Researcher thinks the early and late dates may be anomalous.

Phillip's Garden West 2 (PGW2)	West Coast NP	Headland	Hunting camp – primarily seal/ritual?	Late winter/early spring	2350+/-80 2200+/-110 2190+/-100 2090+/-70

Table 4.11: Data summary of Chapter 4.

exploitation, while summer and fall occupancy generally corresponds with combined interior and maritime resource exploitation. Cow Head (CH) is designated as year-round occupation because it was a workshop site and the chert source was available. In total site chronology ranges from 2885-1735 BP. Phillip's Garden East 1 (PGE1), FC, Party Site (PS) and CH produced some of the oldest occupation dates, while PG, CH, Phillip's Garden West 1 (PGW1) and Phillip's Garden West 2 (PGW2) produced some of the youngest Groswater occupation dates.

	Biface %	Endblade %	Endscraper %	Burin-like Tool %	Sideblade %	Sidescraper %
PGE1 n=423	35	25	17	11	7	5
PGE2 n=575	27	26	23	14	7	2
FC n=385	38	22	26	10	3	10
PS n=48	42	21	21	12	4	
SN n=429	22	24	35	7	8	4
PG n=62	32	26	16	19	3	3
CC n=57	26	28	30	5	7	4
CH n=32	49	17	17		8	8
PGW1 n=537	43	28	11	7	7	1
PGW2 n=301	24	28	18	9	9	1

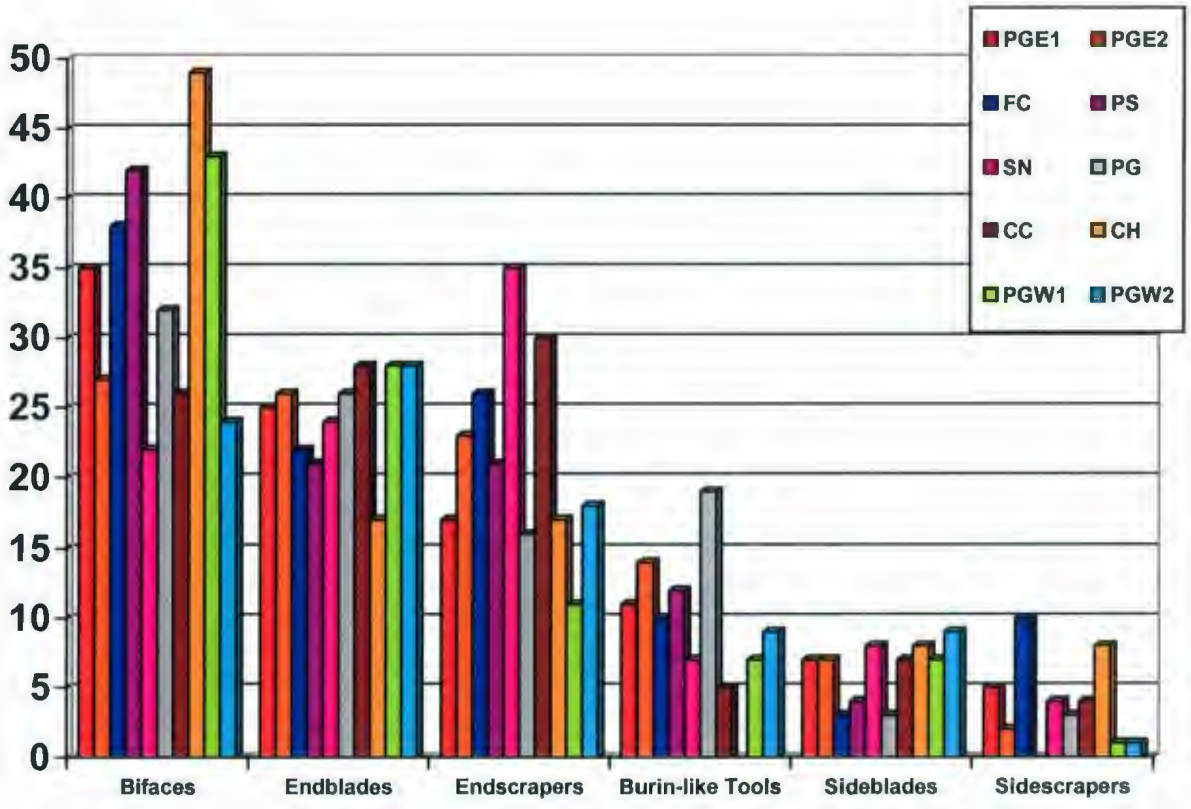


Table and Figure 4.12: Groswater assemblages' tool percentages.

Table and Figure 4.12 demonstrate that most Groswater toolkits consist of six functional tool types; bifaces, endblades, endscrapers, burin-like tools, sideblades and sidescrapers. They also demonstrate that an ordinal ranking of the functional tool categories is generally consistent across the sites. In descending order of relative abundance, Groswater assemblages typically include: bifaces, endblades, endscrapers, burin-like tools, sideblades and sidescrapers. Although the composition of Groswater assemblages tends to be similar, researchers have observed stylistic variability among these six functional tool categories (Hartery and Rast 2001; Melnik 2007; Renouf 2005). The following chapter investigates this issue of material culture stylistic variability among 10 Groswater assemblages.

Chapter 5

A Stylistic Tool Comparison

Introduction

Conducting a quantitative and qualitative comparison of the attributes of Groswater lithic tools from the sites described in the previous chapter will demonstrate the differences and/or similarities among Groswater assemblages. Renouf carried out such an investigation in 2005 upon observing stylistic differences between the Groswater sites and assemblages at Phillip's Garden East and Phillip's Garden West. As Renouf (2005: 64-65) explained, the Phillip's Garden East site and assemblage was "typical", or "stylistically similar", in comparison to other Groswater sites and assemblages in Newfoundland and Labrador, while the Phillip's Garden West site and assemblage was "atypical", or "stylistically dissimilar". Even though the Phillip's Garden West assemblage appeared "atypical" of other Groswater assemblages, most of the tools still had defining Groswater attributes. Thus, Renouf (2005) conducted a quantitative and qualitative comparison of the two assemblages to test and validate her observations.

Renouf's (2005) analysis demonstrated that artifact attributes' central tendencies between the two collections were in fact different, while the artifact attributes' ranges overlapped[1]. The range overlap illustrated that the assemblages were both Groswater, while the central tendency discrepancy showed that the Phillip's Garden West assemblage was in fact a "variant" in comparison to Phillip's Garden East.

[1] The meanings of "central tendency" and "range" will be clarified in the "Methodology" section.

The 2006 Salmon Net excavation yielded a mixed Groswater assemblage; based on a visual inspection, some tools appeared to be stylistically "typical" and some appeared to be stylistically "variant". In addition, the majority of the endblades appeared to be stylistically distinct from either "typical" or "variant" Groswater endblades. In order to test my visual observations, artifact attributes from the Salmon Net lithic assemblage are quantitatively and qualitatively compared against stylistically "typical" and "variant" tool attributes. This investigation is similar to M.A.P. Renouf's 2005 investigation. As Renouf (2005) demonstrated, two of the largest Groswater sites and assemblages in Newfoundland, namely Phillip's Garden East and Phillip's Garden West, are stylistically distinct, and now it seems that Salmon Net yields yet another stylistically distinct combination of Groswater tools. In response to this apparent stylistic variation, the following analysis will determine whether or not we should reconsider what is a characteristic Groswater tool assemblage in Newfoundland.

Methodology

Quantitative and qualitative tool attributes are considered in this investigation. Which attributes are compared vary according to tool type. Groswater endblades are the most stylistically variable tool type; therefore the greatest number of attributes are compared. Quantitatively compared endblade attributes include length, width, length to width ratio, thickness, notch length and width, and base height, while qualitatively compared endblade attributes include percent serration, percent surface grinding, the presence or absence of basal thinning and whether a base is concave, convex or straight.

Quantitatively compared biface attributes include notch length and width and notch length to width ratio, while qualitatively compared biface attributes include percent serration and percent surface grinding. Quantitatively compared sideblade attributes include length, width, length to width ratio and thickness, while qualitatively compared sideblade attributes include shape, percent serration and percent surface grinding. Quantitatively compared burin-like tool attributes include notch length and width and notch length to width ratio, and the only qualitatively compared burin-like tool attribute is shape. Only qualitative attributes were compared among endscrapers; they included shape, the presence or absence of "ears" and the presence or absence of an asymmetrical distal edge. Finally, only one qualitative tool attribute is compared among sidescrapers, and that is shape. Different methods are employed to measure and compare both quantitative and qualitative attributes.

A "box and dot plot" or "box and whisker plot" (Drennan 1996: 39) is used to compare and analyze quantitative attributes. This methodology was chosen to be consistent with Renouf (2005) in her analysis of Groswater lithic variability at Port au Choix. It was also chosen because it is particularly well suited to this type of exploratory research project; it is a useful approach for making initial inquiries and primary observations of patterns in the data. Box and whisker plots are useful to exploratory research because they typically feature original or non-manipulated data, i.e. the actual "spread of each batch" (Drennan 1996: 171) in terms of the midspread and range. In other words, this methodology is useful to researchers like myself who may not want to make initial inquiries of their data by manipulating it and using "a representation of that

spread" (Drennan 1996: 171), for example in the form of mean and standard deviation. Another advantageous feature of the box and whisker plot is that it displays the complete range of data from each assemblage, all the endblade lengths for example. An important feature of the box and whisker plot is the box, which represents the central half of the data and is referred to as the midspread or central tendency. Focusing on the middle 50% of data assures us that we are dealing with the most representative sample since the upper and lower quartiles of the range, represented by lines above and below the box[2], could reflect outliers or anomalies. The longer the box is in the box and whisker plot, the greater is the midspread range. In other words, a long box reflects the fact that the data are more widespread. In contrast, a short box indicates that the data are confined to a smaller range (Drennan 1996).

A bar graph is used to plot and analyze the qualitative data expressed as percentages. The percentages allow a comparison of proportions of qualitative attributes amongst the assemblages and determine whether there are similarities or differences amongst the assemblages.

Once all the sites' attribute data are plotted on box and whisker and bar diagrams, each site's data are analyzed by comparing it against Phillip's Garden East "typical" and Phillip's Garden West "variant" data. Phillip's Garden East and Phillip's Garden West data are used as benchmarks for comparison since Renouf (2005) established them as "typical" and "variant" assemblages. Thus, when other sites' data are compared to

[2] If the central tendency data for a particular attribute from a site is the same as the upper or lower quartile data, then an upper or lower quartile line will not appear on the graph.

Phillip's Garden East and Phillip's Garden West, one can determine whether a site's material culture is stylistically similar to "typical", "variant" or neither type.

The central tendency data ranges for Phillip's Garden East "typical" artifact attributes and Phillip's Garden West "variant" artifact attributes are first calculated so that data from the other sites can be compared to them. For each attribute the central tendency of the data range, as opposed to the full data range, is used in the analysis since it is the most representative or characteristic sample of data within an assemblage. There are two sets of data for both Phillip's Garden East and Phillip's Garden West since each site has an older and younger component. Consequently, "typical" and "variant" central tendency data ranges are determined by combining the younger and older datasets for each site. For example, if the central tendency data of a particular attribute for the younger component of Phillip's Garden East, PGE1, is 1-3 mm and the central tendency data for the older component of Phillip's Garden East, PGE2, is 2-4 mm, than the "typical" central tendency attribute data range is established as 1-4 mm (Figure 5.1). The same process is used to determine the "variant" central tendency data range.

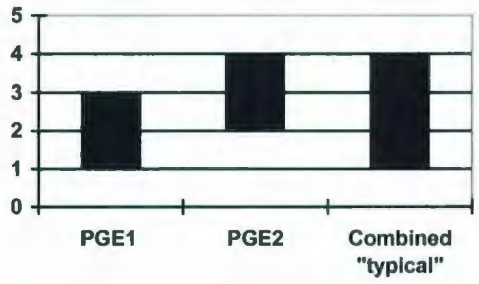


Figure 5.1: Sample chart to demonstrate calculation of "typical" central tendency data.

Once "typical" and "variant" central tendency data ranges for a particular attribute are calculated for Phillip's Garden East and Phillip's Garden West, they are compared to one another to determine whether there is a significant[3] difference between them. Defining significant difference in this investigation is based on the assumption of box and whisker plots that a representative sample equals 50% of the data. Data that falls outside the central tendency range (i.e. outside 50%) may represent outliers or anomalies (Drennan 1996). With this in mind, if less than 50% of "typical" and "variant" central tendency data for a particular attribute overlaps, then for the purposes of this analysis I assume that there is a significant difference between "typical" and "variant" forms of that attribute (Figure 5.2). If, on the other hand, 50% or more of "typical" and "variant" attribute central tendency data overlaps, then for the purposes of this investigation I assume that there is not a significant difference between "typical" and "variant" forms of that attribute. Consequently that attribute is not useful for defining the difference between "typical" and "variant" Groswater tools in these two sites and therefore for other sites (Figure 5.3).

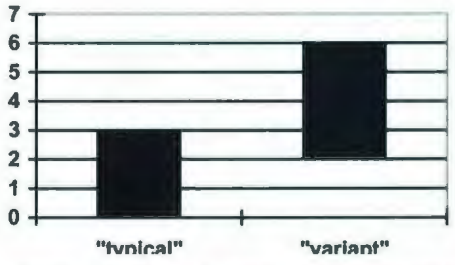


Figure 5.2: Sample chart to demonstrate when there is a significant difference between "typical" and "variant" forms of an attribute.

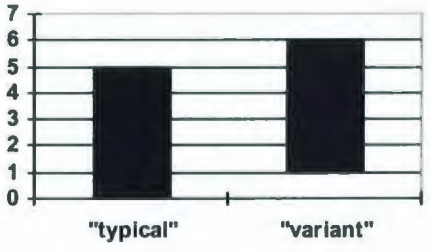


Figure 5.3: Sample chart to demonstrate when there is not a significant difference between "typical" and "variant' forms of an attribute.

[3] In this investigation the term "significant" does not refer to statistical proof, but rather that there is a

Once Phillip's Garden East "typical" data and Phillip's Garden West "variant" data have been determined, an analysis of the assemblages from the other 7 sites may proceed. If there is a demonstrated "typical" or "variant" form of a particular attribute, and 50% or more of the central tendency data for that attribute from one of the other 6 sites falls within the "typical" or "variant" range, then that attribute is considered stylistically "typical" or "variant", respectively. For example, if the central tendency data for "typical" endblades lengths is 3-5 mm, the central tendency data for "variant" endblade lengths is 5-7 mm, and the central tendency data for Salmon Net endblade lengths is 4-7 mm and more than 50% of the Salmon Net endblade lengths are between 5-7 mm, then Salmon Net endblades would be considered to be "variant" (V) with regard to their length (Figure 5.4). If, one the other hand, the central tendency data for Salmon Net endblade lengths is 2-5 mm and more than more than 50% of the Salmon Net endblade lengths are 3-5 mm, then Salmon Net endblades would be considered "typical" (T) with regard to their length (Figure 5.5). If the central tendency data for Salmon Net endblade lengths is 4-6 mm and 50% of the values are in the "typical" range and 50% of the values are in the "variant" range, then the attribute is considered "mixed" (M) with regard to their length (Figure 5.6). If the central tendency data for Salmon Net endblade lengths is 6-9 mm and more than 50% of the values are outside both the "typical" and "variant" range then the attribute is considered "other" (O) with regard to their length (Figure 5.7).

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marked difference in the appearance of an attribute or artifact.

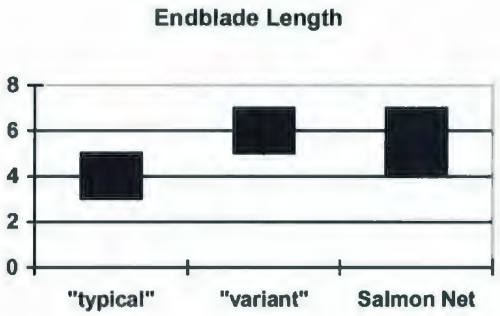

Figure 5.4: Sample chart to demonstrate when another site's attribute data, in this case Salmon Net, would be classified as "variant".

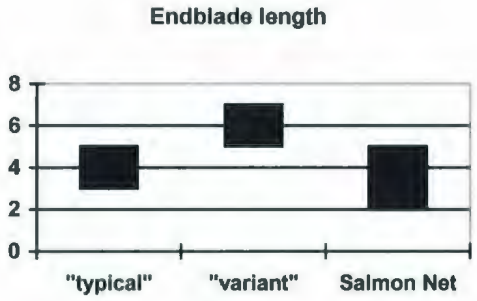

Figure 5.5: Sample chart to demonstrate when another site's attribute data, in this case Salmon Net, would be classified as "typical".

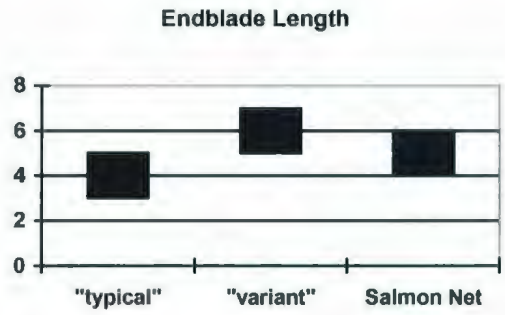

Figure 5.6: Sample chart to demonstrate when another site's attribute data, in this case Salmon Net, would be classified as "mixed".

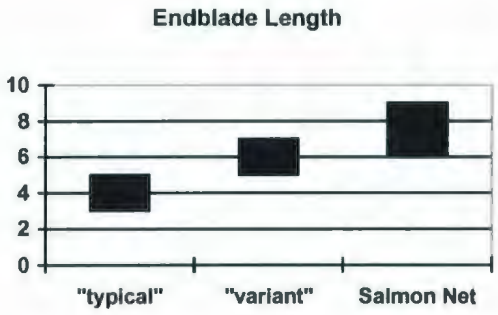

Figure 5.7: Sample chart to demonstrate when another site's attribute data, in this case Salmon Net, would be classified as "other".

This analysis is carried out for each tool attribute in this investigation. However, not all the attribute analyses are as straightforward as the examples presented above. Therefore after each attribute comparison chart there is a discussion to clarify the data presented and to explain any discrepancies or anomalies. Once all the attribute data are gathered for a particular tool type, for example endblades, those data are presented in a chart at the end of the endblade data presentation to demonstrate whether the various sites under investigation yield "typical", "variant", "mixed" or "other" types of endblades in their assemblages. There will also be a discussion after each of these charts to clarify some of the noteworthy information and data trends.

Analysis

In this section, six different types of Groswater artifacts from 10 assemblages are compared. To remind the reader, the artifact types include endblades, bifaces, sideblades, burin-like tools, endscrapers and sidescrapers, and the assemblages come from eight sites; Salmon Net (SNT) (EfAx-25), Cow Head (CH) (DlBk-1), Factory Cove (FC) (DlBk-3), Phillip's Garden West (PGW1 and PGW2) (EeBi-11), Phillip's Garden East (PGE1 and PGE2) (EeBi-1), the Party site (PS) (EeBi-30), Peat Garden (PG) (EgBf-6), and Cow Cove (CC) (EaBa-14). There are two assemblages at both Phillip's Garden East and Phillip's Garden West, associated with older and younger components of the site, making the assemblage total ten.

The comparison is accomplished by measuring, graphing and discussing select attributes from each of the six artifact types. Initial observations about the graphs and

artifact data trends are presented in this section. Overarching conclusions about the results of this study, which includes a discussion of the stylistic trends of each of the assemblages as a whole, occur in the following chapter.

Groswater Endblades

Endblades are the most stylistically variable tool in a Groswater toolkit, thereby requiring the greatest number of attribute comparisons. Most Groswater endblades exhibit defining attributes like side-notches and a box base; however the size of these attributes varies. Furthermore, some endblades are serrated and ground, some have unifacially beveled bases while others are bifacially beveled, some have a straight base while others are concave, the material type varies, some endblades are "tanged", and some are thinner than others. Each of the endblade attributes mentioned above are examined in this section, from each of the eight sites described in Chapter 4, to better understand Groswater endblade variability, particularly in Newfoundland.

Endblade Length

Figure 5.8: Groswater endblade length.

Figure 5.9 demonstrates that the length of Groswater endblades is relatively consistent across 10 assemblages at eight Groswater sites. The Phillip's Garden East combined central tendency data (PGECD) range is 25.72-36.48 mm and the Phillip's Garden West combined central tendency data (PGWCD) range is 26.48-44.76 mm, thus they overlap between 26.48-36.48 mm. More than half of both Phillip's Garden East 1 (PGE1) and Phillip's Garden East 2 (PGE2) and Phillip's Garden West 1 (PGW1) and Phillip's Garden West 2 (PGW2) central tendency data fall within the overlapping range, which indicates that there is no significant difference between "typical" and "variant" endblades with regard to length. Most of the rest of the sites' central tendency data, including Factory Cove (FC), Party Site (PS), Salmon Net (SN) and Peat Garden (PG) either totally or mostly falls within the overlapping "typical" and "variant" range, which suggests that there is no significant difference between Groswater endblade lengths in general. Cow Cove (CC) and Cow Head (CH) central tendency data, 23-24 mm and 36.47-37.56 mm respectively, fall outside the overlapping "typical" and "variant" data range. However, it is important to note that both CC and CH yield small samples and

their central tendency data is only an expression of two out of four specimens. Thus, CC and CH data are more meaningful if one also considers the upper and lower quartiles because these show that CC and CH endblade lengths do relate to the other Groswater assemblages.

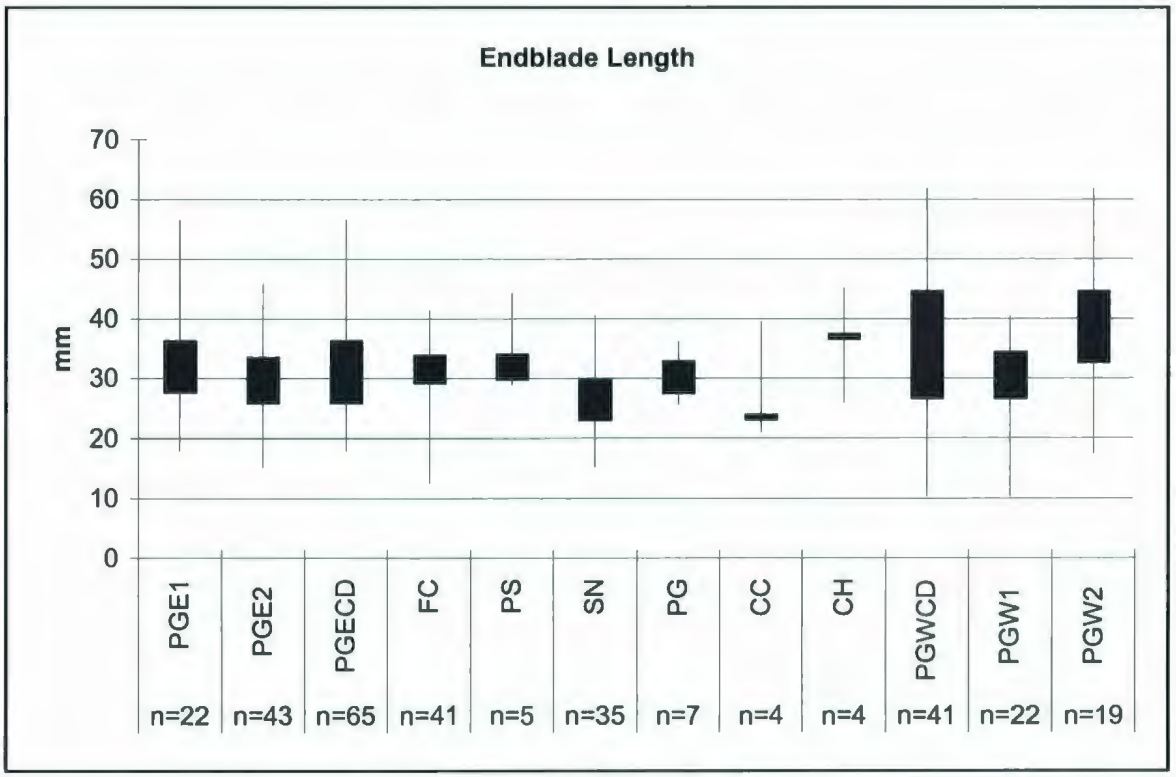

Figure 5.9: Groswater endblade lengths.

Endblade Width

Figure 5.10: Groswater endblade width.

Figure 5.11 shows that Groswater endblade widths are relatively consistent across ten assemblages at eight Groswater sites. The Phillip's Garden East combined central tendency data range is 11.43-16.85 mm and the Phillip's Garden West central tendency data range is 12.26-16.13 mm, thus they overlap between 12.26-16.13 mm. More than half of both PGE1 and PGE2 and PGW1 and PGW2 central tendency data fall within the overlapping range, which indicates that there is no significant difference between "typical" and "variant" endblades with regard to width. Most of the rest of the sites' central tendency data, including FC, PS and SN either totally or mostly falls within the overlapping PGE and PGW range, which suggests that there is no significant difference between Groswater endblade widths in general. Seventy-seven percent of the PG central tendency data, however, falls below the overlapping PGE and PGW range, which indicates that PG endblades are generally narrower than those found in the other ten Groswater assemblages. Most of CC and CH central tendency data also falls outside the overlapping PGE and PGW range; however these sites produced small samples and thus it is more meaningful to also consider the upper and lower quartiles, which do

demonstrate that the CC and CH assemblages relate to the other Groswater assemblages with regard to endblade width.

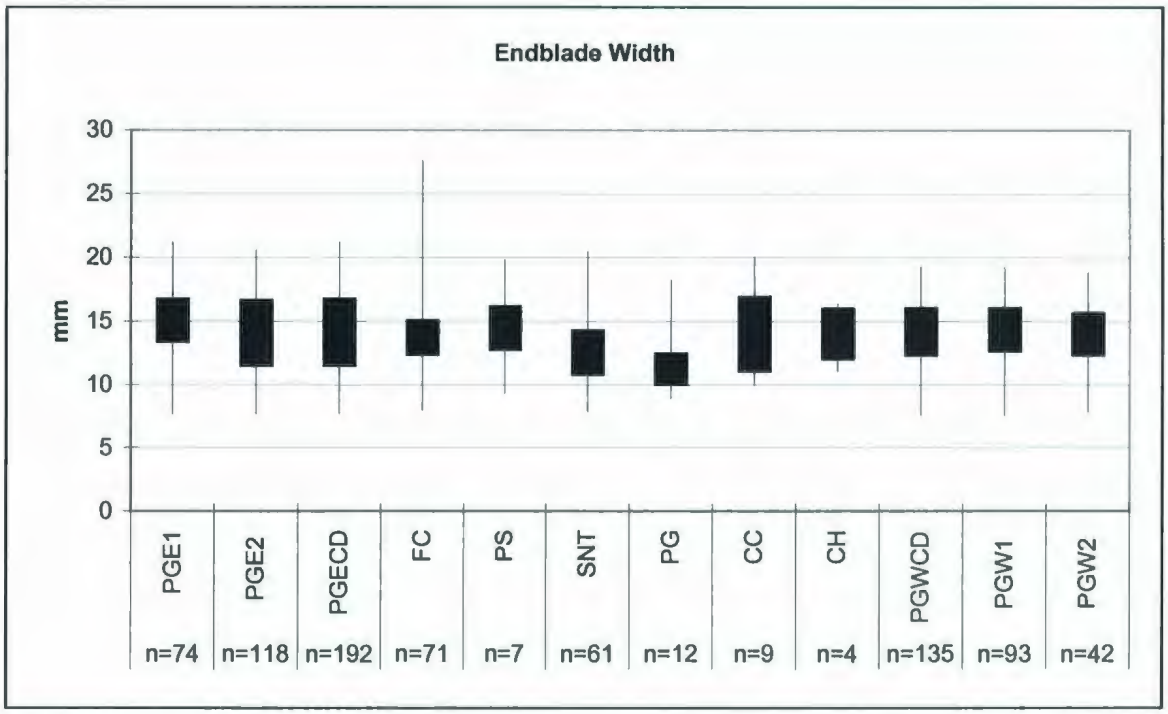

Figure 5.11: Groswater endblade widths.

Endblade Length:Width

Groswater endblade length-to-width ratios demonstrate their elongation. According to the data in Figure 5.12, there is a significant difference between PGE and PGW with regard to endblade length-to-width ratios. The PGE combined central tendency data range is 1.93-2.5 mm and the PGW central tendency data range is 2.24-3.71 mm, thus they overlap between 2.24-2.5 mm. Less than 50% of PGE1, PGE2, PGW1 and PGW2 central tendency data fall within the overlapping range, thus indicating

a significant difference between "typical" and "variant" endblades with regard to endblade length-to-width ratios. In general, "variant" Groswater endblades are more elongated than "typical" Groswater endblades. FC, PG and CH endblades do not yield a significant trend with regard to endblade length-to-width ratio; most of their central tendency data fall within the PGE and PGW overlapping range. Fifty percent of CC central tendency data falls within the typical range and 50% falls within the overlap range, thus indicating that CC endblades are "mixed" in terms of this particular attribute. More than half of PS and SN central tendency data falls within the "typical" PGE range, thus indicating that most of these assemblages' endblades are similar to "typical" specimens in terms of this particular attribute.

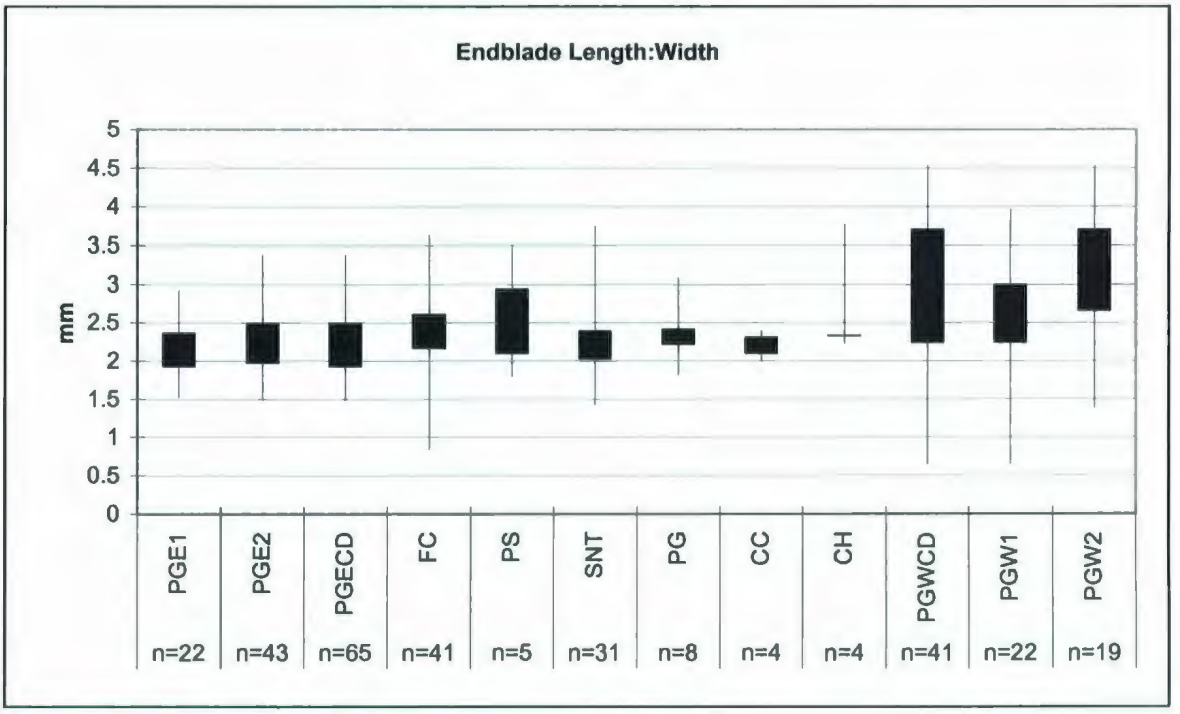

Figure 5.12: Endblade length:width.

Endblade Thickness

Figure 5.13: Groswater endblade thickness.

It appears from Figure 5.14 that Groswater endblade thickness is relatively consistent across 10 assemblages at eight Groswater sites. However, when the data are scrutinized it indicates there is actually some slight variation with regard to endblade thickness among the assemblages. The PGE combined central tendency data range is 3.09-4.25 mm and the PGW central tendency data range is 2.63-3.67 mm, thus they overlap at 3.09-3.67 mm. Less than half of both PGE1 and PGE2 central tendency data fall within the overlapping range but more than half of PGW1 and PGW2 central tendency data fall within the overlapping range. This suggests that "typical" Groswater endblades are slightly thicker than "variant" endblades. The central tendency data for FC and PS indicate that endblades in these assemblages are on the thicker side; more than half of their central tendency data is above the "typical" central tendency data range. The central tendency data from SN, PG, CC and CH mostly falls within the overlapping PGE and PGW range, though many of those assemblages also have a large (i.e. more than 40%) proportion of thinner endblades.

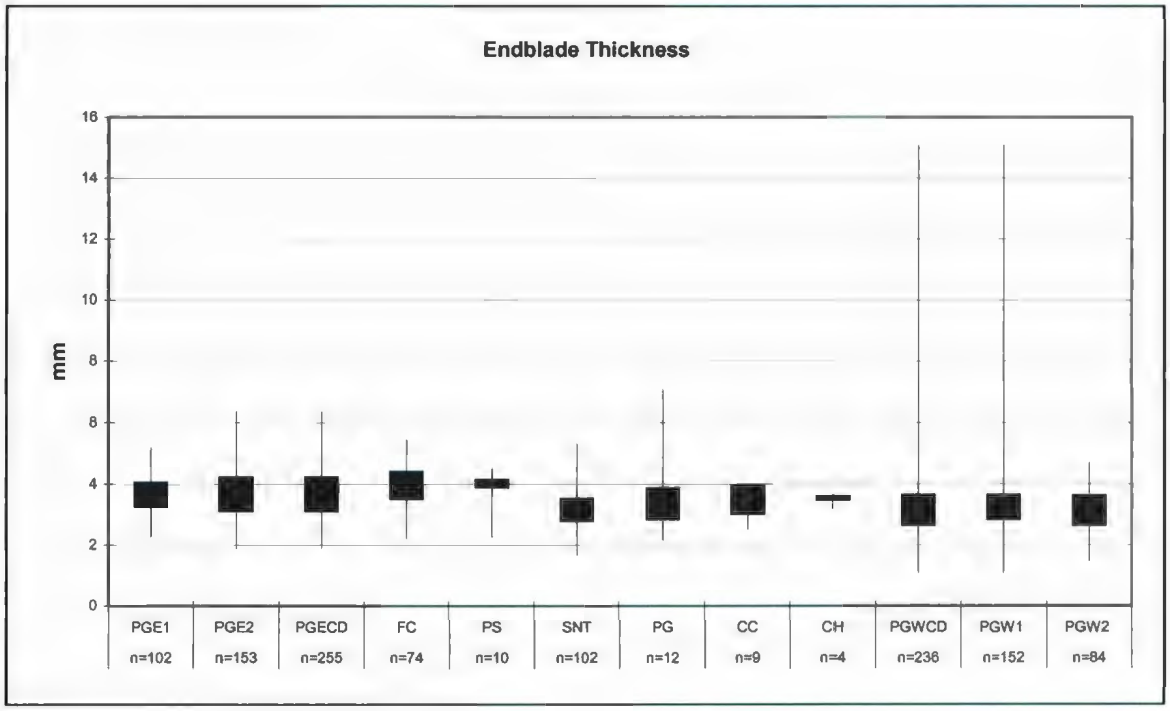

Figure 5.14: Groswater endblade thickness.

Endblade Notch Length

Figure 5.15: Groswater endblade notch length.

Groswater endblade notch length is a variable attribute. The contrast between Phillip's Garden East "typical" notch lengths and Phillip's Garden West "variant" notch lengths is particularly apparent in Figure 5.16, as their central tendency data do not overlap at all. The PGE combined central tendency data range is 2.95-3.99 mm and the PGW central tendency data range is 1.54-2.23 mm. The fact that PGE and PGW endblade notch length central tendency data do not overlap suggests that Groswater endblade notch length is a particularly meaningful attribute for telling the difference between "typical" and "variant" endblades. PS central tendency data are, in general, higher than the "typical" central tendency data, thus they are categorized as "other" (O) in connection with this particular attribute. FC central tendency data primarily correspond with the "typical" endblade notch length range, which means that FC endblades are categorized as "typical" with regard to this attribute. A significant proportion of SN, PG, CC and CH endblade notch lengths fall in between "typical" and "variant" ranges. In fact, more than 50% of SN and CH endblade notch lengths fall in between the "typical" and "variant" ranges, which means these assemblages are also classified as "other" (O) in connection with this particular attribute. PG and CC are classified as "mixed" (M) with regard to this attribute, since 50% of PG data falls in the "variant" range and 50% falls in between "typical" and "variant" range, and since CC yields 33% of each "typical", "variant" and in between notch lengths.

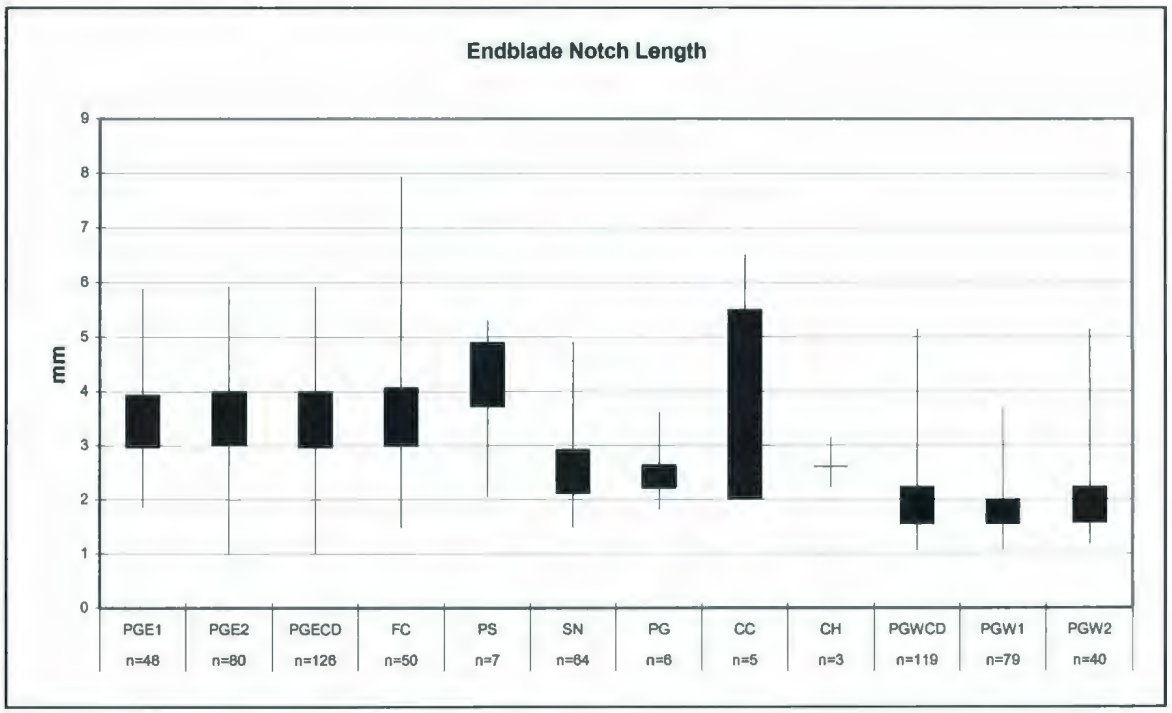

Figure 5.16: Groswater endblade notch lengths.

Groswater Endblade Notch Width

Figure 5.17: Groswater endblade notch width.

There is some variation in terms of Groswater endblade notch width, though not between Phillip's Garden East "typical" and Phillip's Garden West "variant" assemblages data. The Phillip's Garden East combined central tendency data range is 2.08-3.64 mm and the Phillip's Garden West central tendency data range is 1.75-2.89 mm, thus they overlap between 2.08-2.89 mm. More than 50% of PGE1, PGE2, PGW1 and PGW2 central tendency data falls within the overlapping range, which means there is no significant difference between "typical" and "variant" endblades in terms of notch width. CH central tendency data also fall within the overlapping "typical" and "variant" data range. PS is "mixed" (M), with 25% of the data below the overlapping range, 25% within the overlapping range and 50% above the overlapping range. The rest of the sites' central tendency notch widths, including FC, SN, PG and CC, are for the most part less than the overlapping "typical" and "variant" notch widths, which means these sites are characterized as "other" (O) in terms of this attribute.

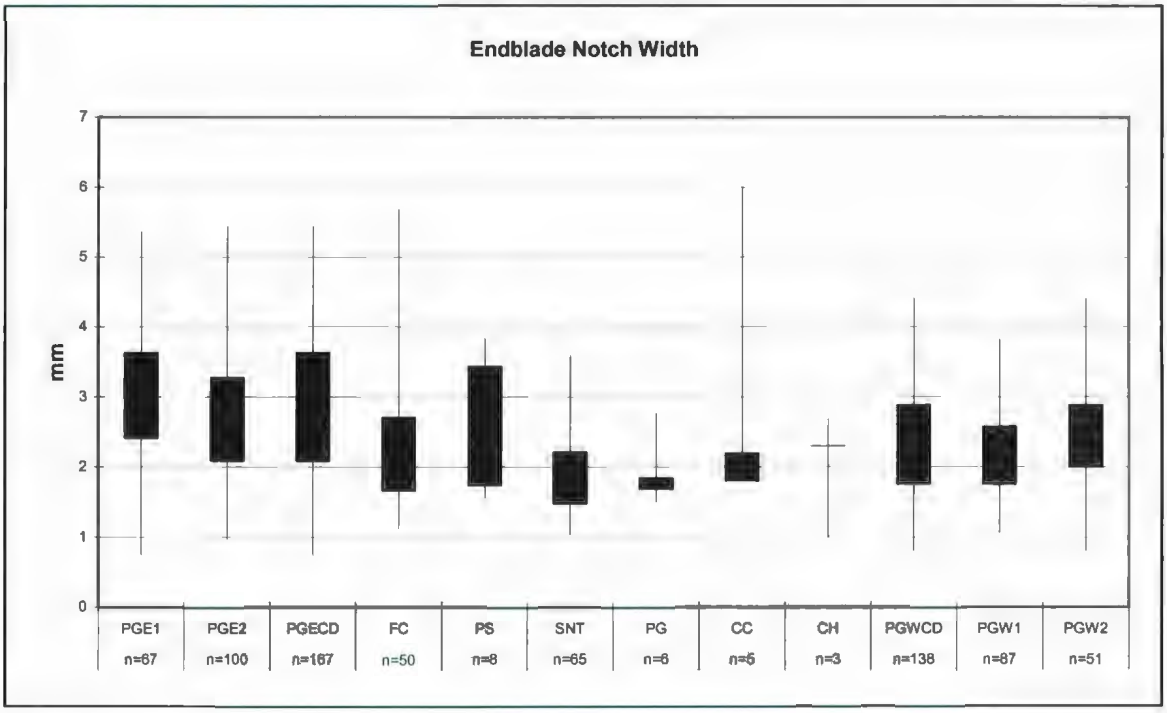

Figure 5.18: Groswater endblade notch width.

Groswater Endblade Base Height

Figure 5.19: Endblade base height.

There is some variation in Groswater endblade base height, though again not between Phillip's Garden East "typical" and Phillip's Garden West "variant" assemblage data. The Phillip's Garden East combined central tendency data range is 4.8-8.64 mm and the Phillip's Garden West central tendency data range is 5.8-8.27 mm. Phillip's Garden West combined central tendency data completely overlaps with Phillip's Garden East combined central tendency data, which indicates that there is no significant difference between "typical" and "variant" Groswater endblades in terms of endblade base height. On the other hand, the rest of the sites have a significant proportion of endblades whose bases fall below the PGE and PGW overlapping ranges. In other words, more than half of FC, PG, SN, CC and CH base heights are shorter than PGE and PGW endblade bases. This information is meaningful because PGE and PGW base height central tendency data is so consistent and because most of the other Groswater sites yield a significant amount of the short-base endblades. In addition, 42% of FC and 45% of SN endblade base height central tendency data do fall into the PGE and PGW range, so they are not totally distinct endblade collections; they are somewhat mixed in regard to endblade base height.

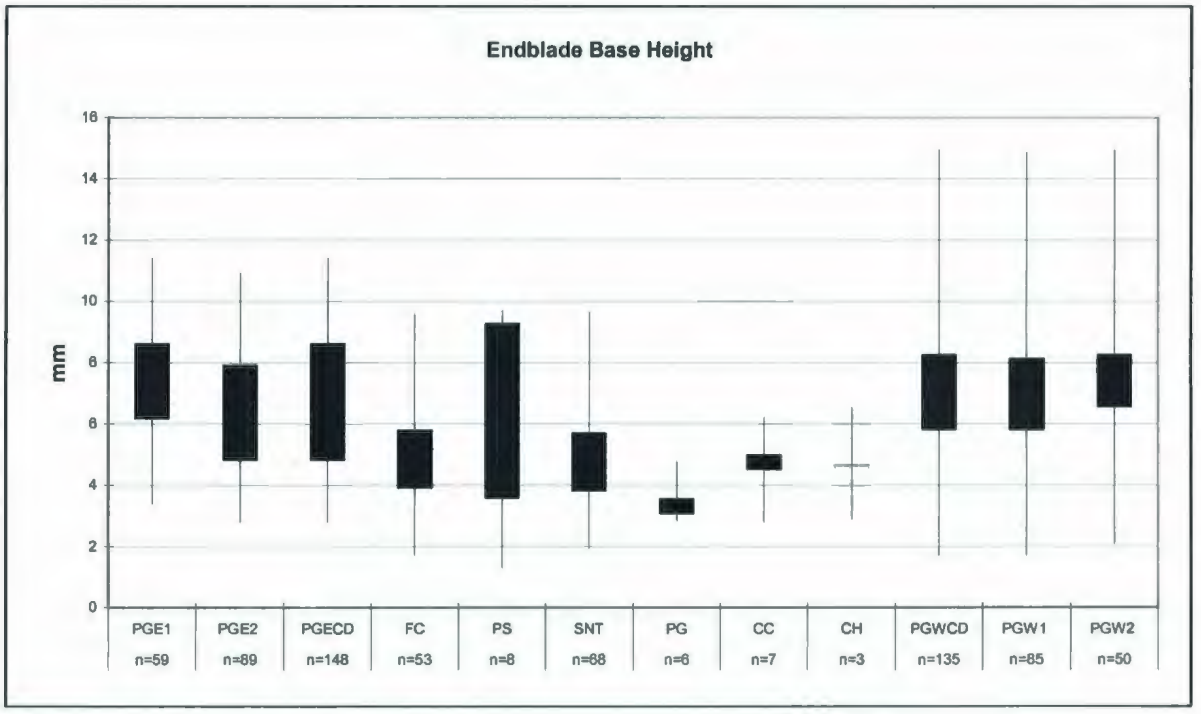

Figure 5.20: Groswater endblade base height.

Endblade Serration

As Figure 5.21 demonstrates, PGW "variant" as opposed to PGE "typical" Groswater endblades tend to be serrated. The combined PGW1 and PGW2 percent serration is 56%; thus, on average, 56% of the endblades in PGW "variant" assemblage are serrated. A small portion, 13%, of CC endblades are serrated and a larger portion, 30%, of SN endblades are serrated. The proportion of serrated endblades in the SN assemblage is noteworthy because it is over half of the proportion of PGW serrated endblades.

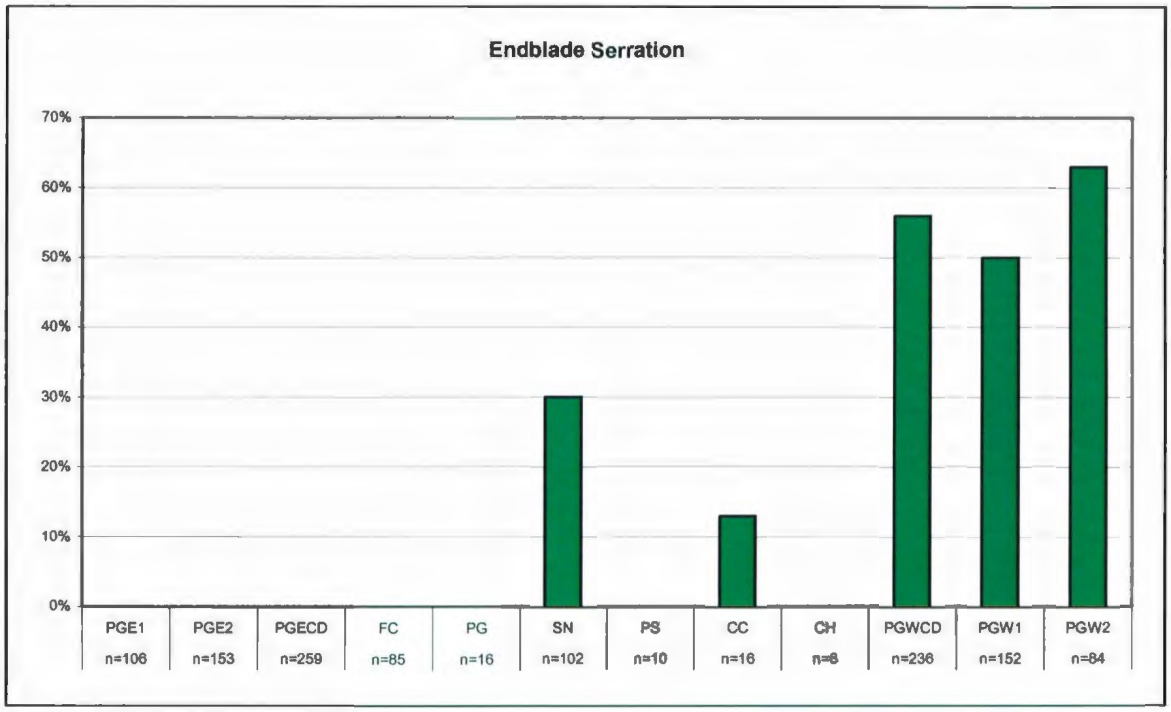

Figure 5.21: Endblade serration.

Endblade Surface Grinding

As Figure 5.22 demonstrates, PGW "variant" as opposed to PGE "typical" Groswater endblades tend to have more surface grinding. The combined PGE1 and PGE2 percent surface grinding is 3%, while the combined PGW1 and PGW2 percent surface grinding is 23%, though it should be noted that there is a big difference between PGW1 and PGW2. PS and CC have some surface ground endblades, 10% and 6%, respectively. These percentages are closer to PGE "typical" combined percentage, thus they are characterized as "typical" assemblages with regard to this attribute. Sixteen percent of SN endblades have surface grinding, which is closer to PGW "variant"

combined percentage, thus SN endblades are most like PGW "variant" endblades in regard to this attribute.

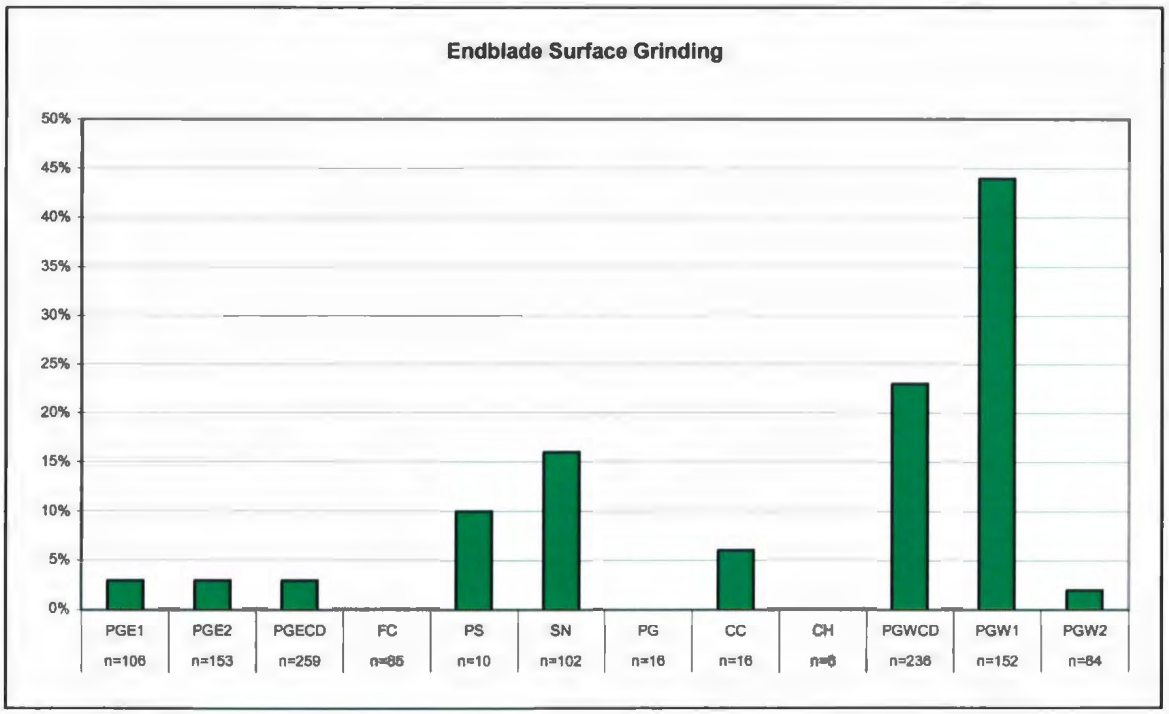

Figure 5.22: Groswater endblade surface grinding.

Endblade Basal Thinning

Basal thinning refers to whether an endblade base was thinned by flaking in order to process it to a finished tool. Flaking can occur on both faces of the endblade base, one face or neither. PGE1, PGE2, PGW1, and PGW2 all indicate that most Groswater endblades in their collections were basally thinned on one face only, on average 85% for PGE and 68% for PGW. It is noteworthy that there are proportionally more bifacially thinned endblade bases in the PGW "variant" collections, 32%, as opposed to 15% for PGE. Interestingly the rest of the sites had more bifacially thinned endblade bases than unifacially thinned bases. Therefore they are characterized as "other" with regard to this attribute.

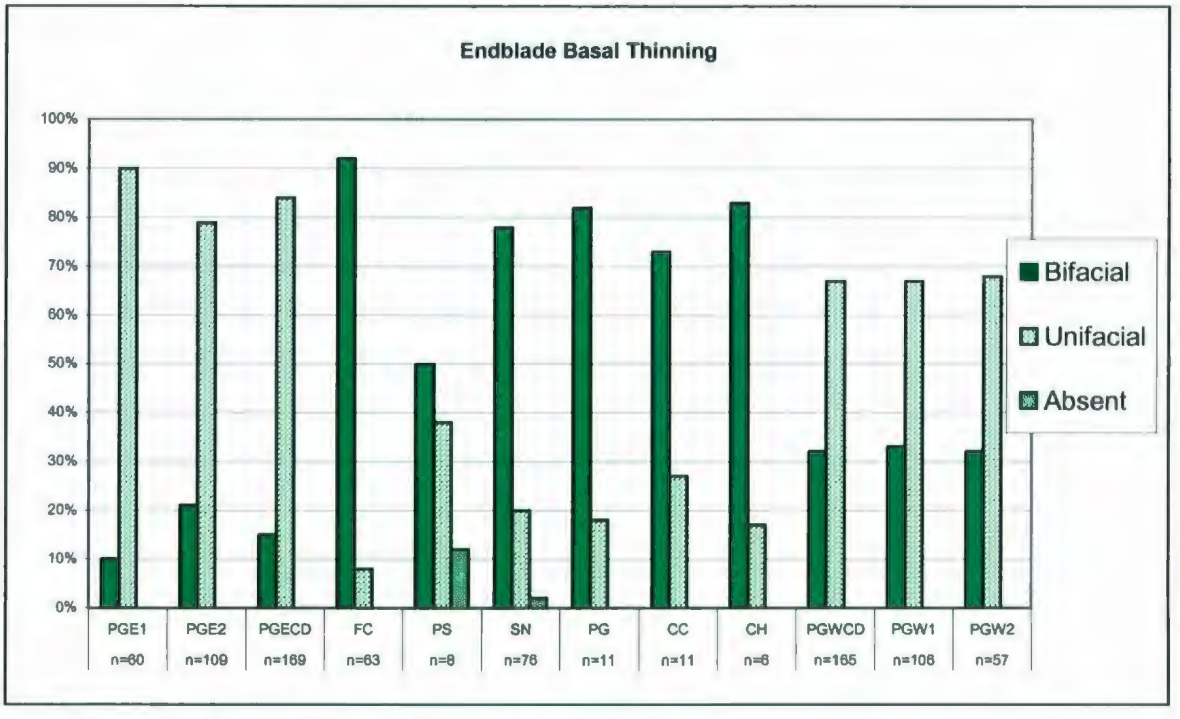

Figure 5.23: Groswater endblade basal thinning.

Endblade Base Shape

Groswater endblade base shape refers to whether the proximal margin of the endblade is straight, concave or convex. Most Groswater endblades have a straight base. SN, PG, CC, CH, PGW1 and PGW2, however, have more concave shaped bases than the other site assemblages. The fact that PGW1 and PGW2 fall into this category, namely they bear a higher percentage of concave bases, suggests that this attribute is more likely associated with "variant" endblades.

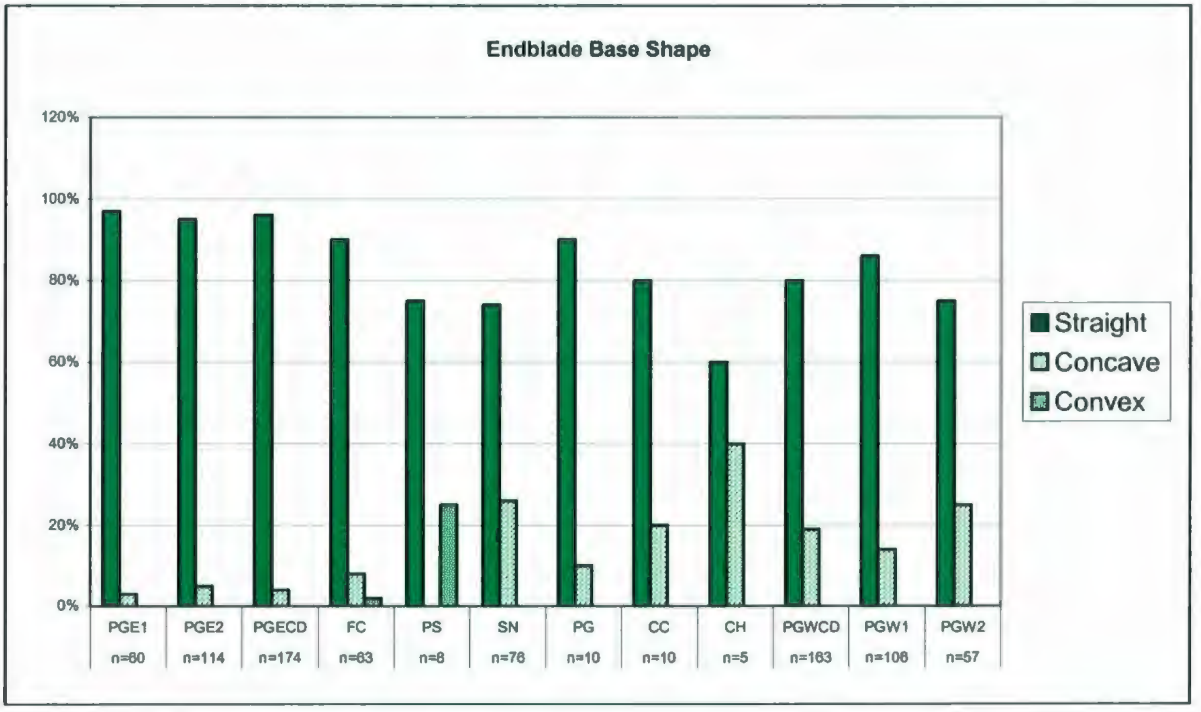

Figure 5.24: Groswater endblade base shape.

Groswater Endblade Summary

Table 5.1 summarizes the endblade attribute analysis presented above. It is evident that Groswater assemblages yield a greater stylistic variety of endblades than

previously thought. Prior to this investigation researchers thought there were two stylistic forms of Groswater endblades, "typical" and "variant", and that either "typical" or "variant" endblades dominated Groswater assemblages (Renouf 2005). This analysis confirmed the distinction between Phillip's Garden East (i.e. PGE1 and PGE2) "typical" endblades and Phillip's Garden West (i.e. PGW1 and PGW2) "variant" endblades. In addition, this analysis now informs us that there are also stylistically "mixed" Groswater endblade collections in Newfoundland; in other words, some collections contain both "typical" and "variant" endblade forms. Furthermore, there appears to be a new, distinct endblade form that is characterized by a smaller base than those on "typical" and "variant" endblades. This new endblade form, characterized as "other", is discussed further below.

The results of the endblade comparison indicate that there are some stylistic similarities between Phillip's Garden East "typical", Phillip's Garden West "variant", and the other assemblages' endblades. For example, in general there is no significant difference between assemblages with regard to endblade length and width.

The endblade comparison also indicates that none of the other Groswater endblade collections investigated here are stylistically identical to PGE1, PGE2, PGW1 or PGW2 endblade collections. Notch length and base height are highlighted in Table 5.1 because they are the most valuable attributes in terms of defining Groswater endblade stylistic variability. Notch length is the most significant difference between "typical" and "variant" endblades because unlike any other attribute, PGE combined notch length central tendency data and PGW combined notch length central tendency data do not

	PGE1	PGE2	FC	PS	SNT	PG	CC	CH	PGW1	PGW2
Endblade Length	-	-	-	-	-	-	O	O	-	-
Endblade Width	-	-	-	-	-	O	O	O	-	-
Endblade Length:Width	T	T	-	T	T	-	M	-	V	V
Endblade Thickness	T	T	O	O	-	-	-	-	-	-
Notch Length	T	T	T	O	O	O	O	O	V	V
Notch Width	-	-	O	M	O	O	O	-	-	-
Base Height	-	-	OT	O	OM	O	O	O	-	-
Serration	T	T	T	T	M	T	M	T	V	V
Surface Grinding	T	T	O	T	M	O	T	O	V	V
Basal Thinning	T	T	O	O	O	O	O	O	V	V
Base Shape	T	T	T	O	V	V	V	V	V	V
SUMMARY	T	T	TO	O	OM	O	O	O	V	V

Table 5.1: Endblade attribute data compilation.

Table Key

T = attribute data is within "typical" range

V = attribute data is within "variant" range

O = attribute data is neither within "typical" nor "variant" range

- = attribute data is within the "typical" and "variant" overlapping range

M = attribute data is "mixed", with "typical", "variant" and/or "other" data

= no data for this attribute

OM = mostly O, some M

MO = mostly M, some O

TO = mostly T, some O

OT = mostly O, some T

overlap. The fact that there is no central tendency data overlap indicates that "typical" endblade notch lengths are consistently longer than "variant" endblade notch lengths. FC falls into the "typical" category with regard to this attribute, while the other sites' central tendency data do not fit into either the "typical" or "variant" ranges. PS notch lengths are slightly above the "typical" average; however it is notable that PS notch lengths are much more similar to the "typical" endblade range than the "variant" range. Interestingly, most of SN, PG, CC and CH notch length central tendency data are between the "typical" and "variant" range, which stylistically separates a portion of these sites' endblades from "typical" and "variant" specimens. A portion of SN, PG, CC, CH, as well as FC endblades in this case are also stylistically separate from "typical" and "variant" specimens because they have shorter bases. For this attribute in particular it is important to consider that stylistic variability, i.e. whether an endblade base is short or long, could affect how the tool is hafted, and thus what type of animal can be is being hunted (Figure 5.25). The idea that endblade stylistic variability is related to tool function will be discussed further in Chapter 6.

Figure 5.25: Left: Typical Groswater endblade, hafted (Leblanc 1996:48). Right: Groswater endblade with a short base.

It is important to note that specimens of both "typical" and/or "variant" endblades occur in most of the six Groswater endblade collections considered here, even though the general compositions of most of the endblade collections have been identified as stylistically distinct from PGE "typical" and PGW "variant" endblade collections. Table 5.1 suggests that PS, PG, CC and CH endblades are highly variable stylistically; however these results are somewhat skewed because of small sample sizes. In order to get an accurate understanding of PS, PG, CC and CH stylistic endblade compositions, one can only consider the individual endblade specimens. The results of the individual specimen analysis are that PS yields a mix of "typical" as well as "other", small base endblade specimens, PG yields primarily "other", small base specimens, and CC and CH yield a mix stylistically "typical", "variant" and "other" endblade specimens. The FC endblade collection includes a significant portion of short-based endblades, and the rest are stylistically similar to "typical" endblades. Since there is a relatively equal amount of "typical" as well as "other" endblades in the FC collection, it is characterized as TO in Table 5.1.

Salmon Net endblade stylistic variability is considered here more closely than the other sites, since the Salmon Net site is the focus of this investigation and because it has a particularly variable endblades assemblage. Five stylistic endblade types have been identified in the Salmon Net collection. Short-based endblades are one type and they are the most prevalent, making up 43% of the collection. Short-based endblades, herein referred to as "Salmon Net-type" because they were first identified and are so prevalent in the Salmon Net assemblage, are identified by their base height; it is below the

combined "typical" and "variant" central tendency data range discussed above. "No-notch" endblades are another variety; they make up 28% of the collection. "No-notch" endblades are identified by the fact that they do not have notches and therefore are not box-based. "Small" endblades are a third type; they make up 5% of the assemblage. Small endblades are identified by the fact that their attributes consistently measure below average. "Typical" and "variant" endblades are the last two types; they make up 6% and 18% of the assemblage respectively. "Typical" and "variant" were identified once "Salmon Net-type", "no-notch" and "small" types were separated out from the collection. "Typical" and "variant" can be distinguished be their notch lengths; "typical" notch lengths are between 2.95-3.99 mm, while "variant" notch lengths are between 1.54-2.23 mm. In order to demonstrate that these types do exist in the Salmon Net endblade collection, a comparative analysis similar to the one above is presented here.

Salmon Net Endblade Lengths

Figure 5.26 indicates that SN[4]-PGE, i.e. stylistically "typical", endblades and SN-PGW, i.e. stylistically "variant", endblades are slightly longer than SN, i.e. "Salmon Net-type", and SN-no notch types. SN-Small endblades are logically the smallest on the chart. Referring to Figure 5.9, most Groswater endblades fall within the range 26.48-36.48 mm in terms of length. This standard was set by the overlapping combined PGE and PGW central tendency data. SN-PGE and SN-PGW fall into this endblade length range; however, only half the SN and none of the SN-Small or SN-no notch endblades fall within the range.

[4] SN=Salmon Net

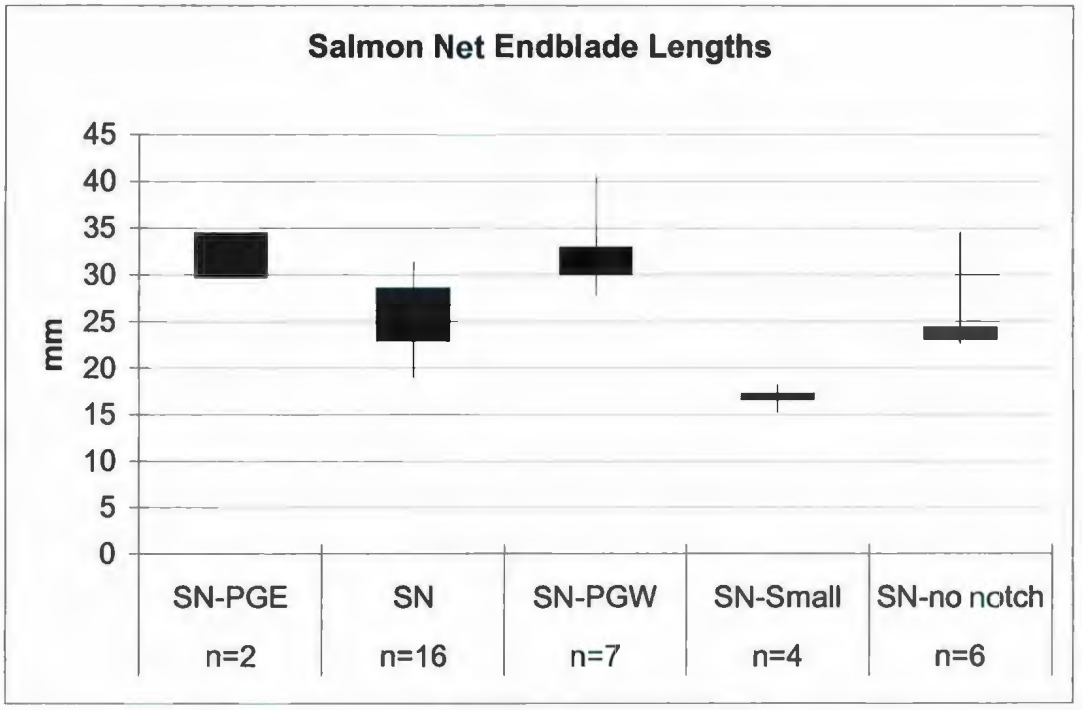

Figure 5.26: Salmon Net endblade lengths.

Salmon Net Endblade Widths

According to Figure 5.27, SN-PGE and SNPGW endblades are generally wider than SN, SN-Small and SN-no notch endblades. As expected, SN-small endblades are the narrowest type of endblades in the Salmon Net collection. Referring to Figure 5.11, most Groswater endblades fall within the range 12.26-16.13 mm for width. This standard was set by the overlapping combined PGE and PGW central tendency data. SN-PGE central tendency data all fall within this range, only 33% of SN-PGW central tendency data fall within this range, only 23% of SN central tendency data fall within this range, 0% of SN-Small central tendency data fall within this range, and only 20% of SN-no

notch central tendency data fall within this range. In general Salmon Net endblades are thinner than most Groswater endblades.

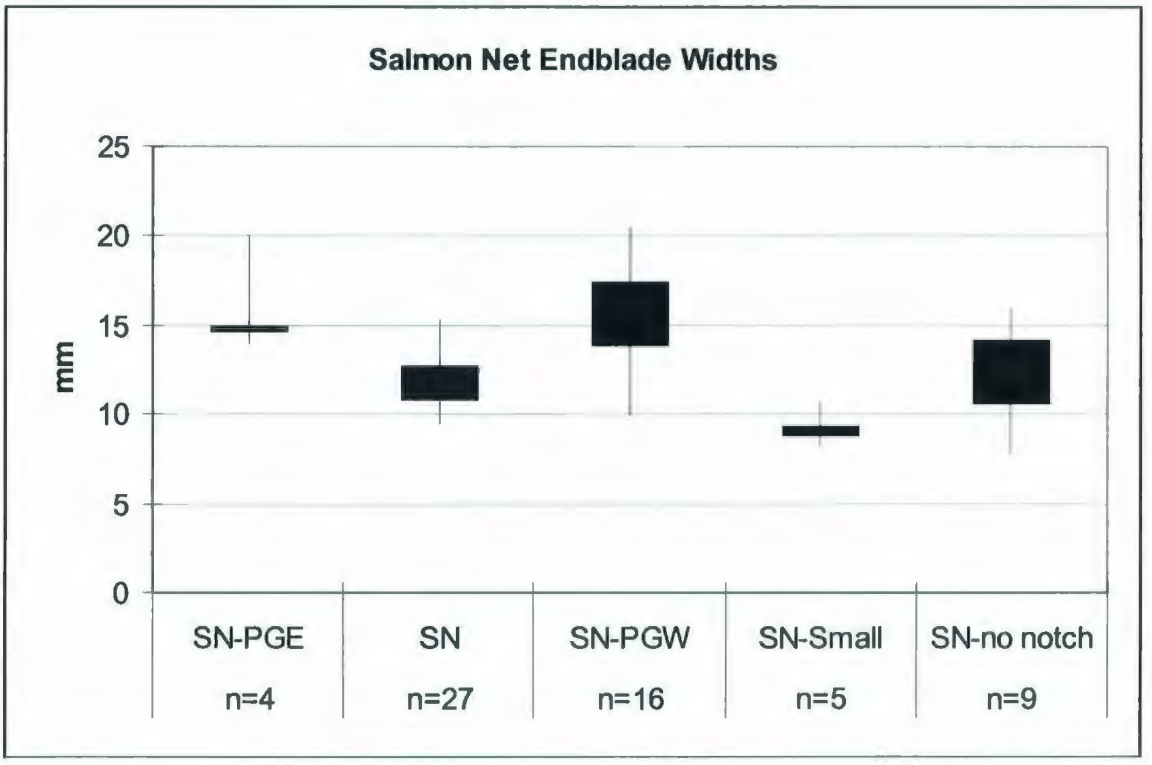

Figure 5.27: Salmon Net endblade widths.

Salmon Net Endblade Length:Width

According to Figure 5.28, Salmon Net endblades' length:width are similar. Referring to Figure 5.12, there is a distinction between "typical and "variant" endblades in terms of length:width. "Typical" endblades range from 1.93-2.5 mm and "variant" range from 2.24-3.71 mm; thus they overlap at 2.24-2.5 mm but most of their central tendency data do not fall within this range. SN-PGE central tendency data fall within the "typical" range, SN-PGW central tendency data fall within the overlapping range, 42% of

SN central tendency data fall within the overlapping range and 58% fall within the "typical" range, and both SN-Small and SN no-notch central tendency data are partly "typical" and partly less than typical.

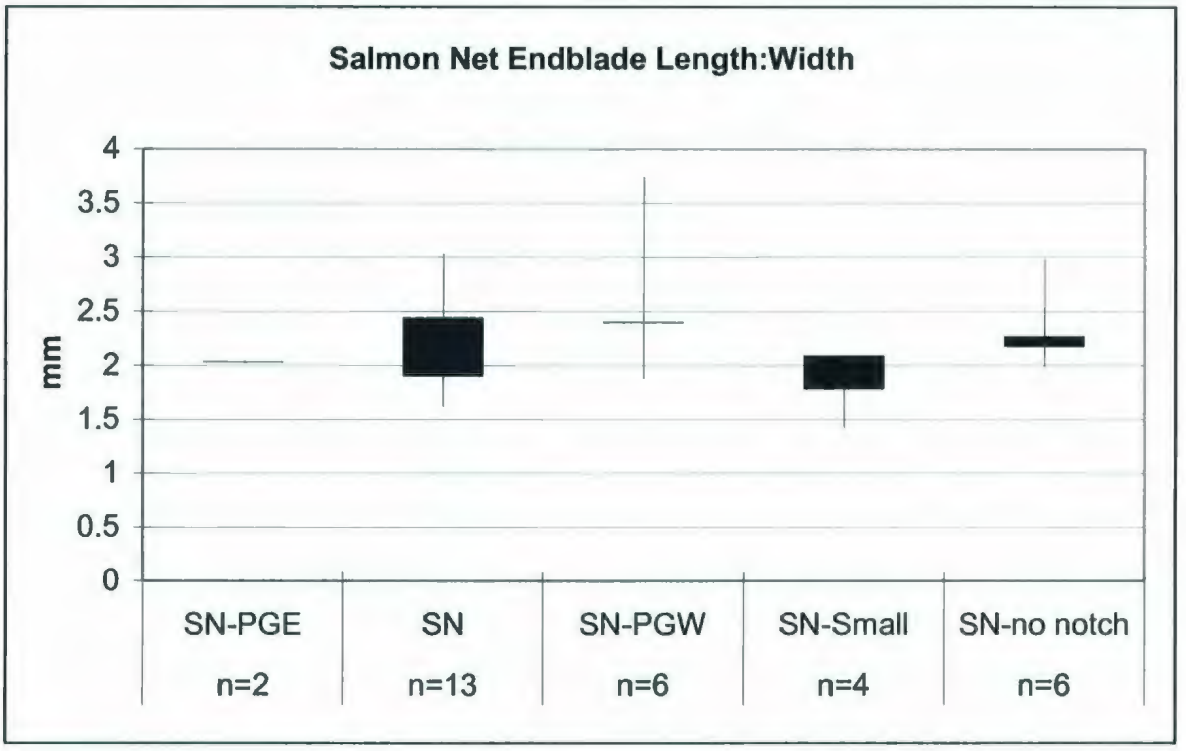

Figure 5.28: Salmon Net endblade length:width.

Salmon Net Endblade Thickness

SN-PGE endblades are slightly thicker than SN, SN-PGW, SN-Small and SN-no notch endblades. SN-Small endblades are noticeably the thinnest. Referring to Figure 5.14, most "typical" endblades are slightly thicker than "variant" endblades. "Typical" endblades range from 3.09-4.25 mm and "variant" range from 2.63-3.67 mm; thus they overlap at 3.09-3.67 mm. However, most PGE "typical" data are slightly below the

overlapping range, while most PGW "variant" data fall within the range. SN-PGE central tendency data fall partly within the "typical" range and partly within the overlapping range, SN-PGW central tendency data fall mostly within the overlapping range, SN central tendency data fall partly within the overlapping range and partly within the "variant" range, SN-Small central tendency data fall below both the "typical" and "variant" ranges, and SN no-notch central tendency data fall mostly within the overlapping range.

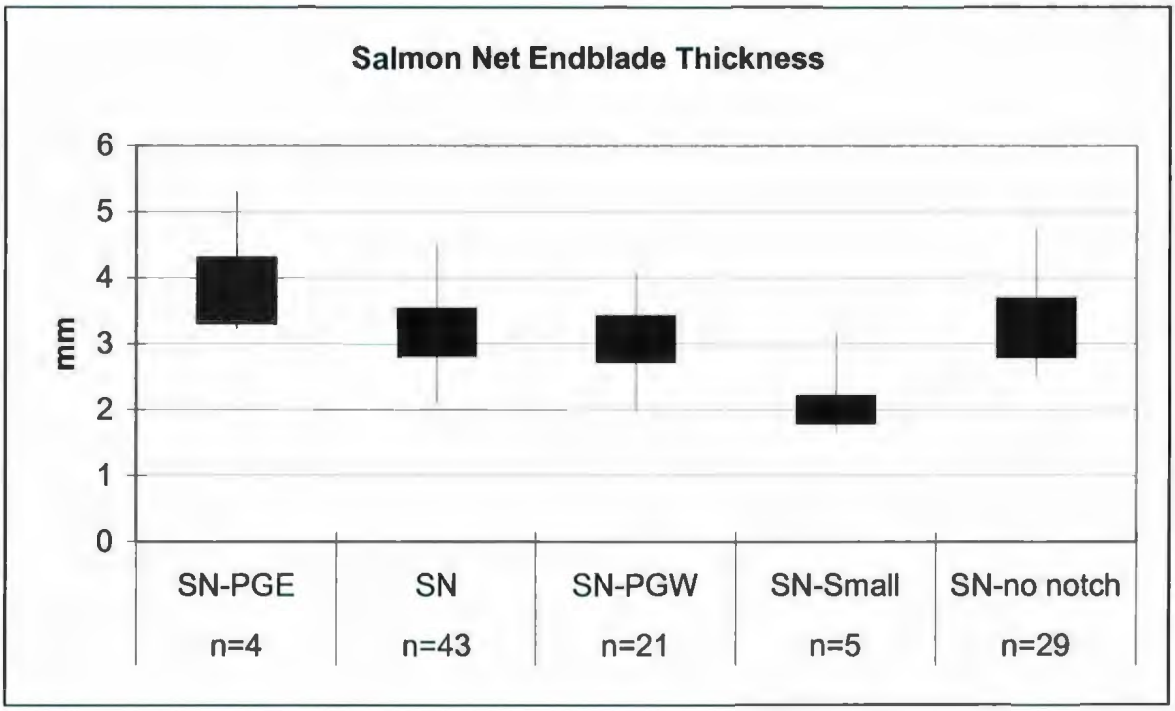

Figure 5.29: Salmon Net endblade thickness.

Salmon Net Endblade Notch Lengths

SN-PGE notch lengths are clearly the longest in the Salmon Net collection, while SN notch lengths tend to be just slightly longer than SN-PGW and SN-Small notch lengths. SN-no notch endblades are not featured in Figure 5.30 because they do not have any notches. Referring to Figure 5.16, "typical" notch lengths are generally within the range 2.95-3.99 mm, while "variant" notch lengths are generally within the range 1.54-2.23 mm. There is no overlap between "typical" and "variant" central tendency data, which indicates that there is a significant difference between "typical" and "variant" notch lengths. According to Figure 5.30, SN-PGE notch lengths are slightly greater than "typical" notch length range determined from Figure 5.16, though just by a few tenths of a millimeter which means they closely resemble "typical" notch lengths. SN-PGW notch lengths are primarily within the established "variant" range. Interestingly, most of the SN notch lengths fall in between the decided "typical" and "variant" ranges, between 2.24-2.94 mm. Finally, SN-Small endblade notch lengths are somewhat variable; one is just below the "variant" range, two are within the "variant" range and two are in between the "typical" and "variant" range.

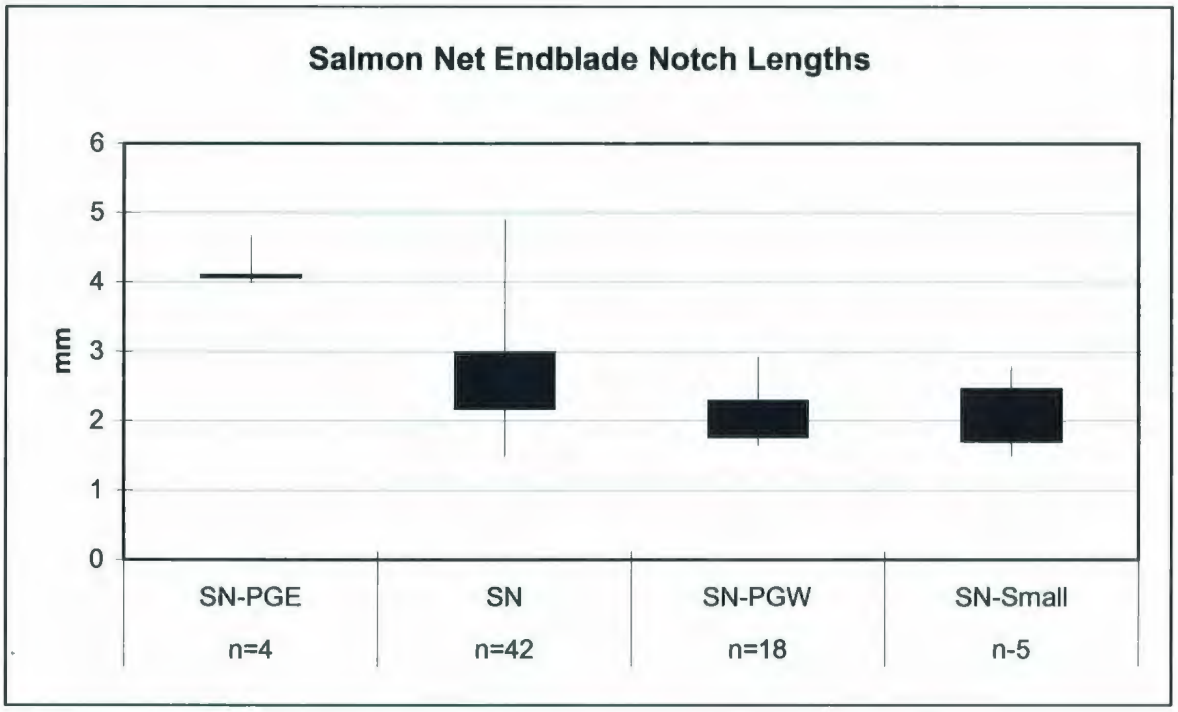

Figure 5.30: Salmon Net endblade notch lengths.

Salmon Net Endblade Notch Widths

According to Figure 5.31, SN-PGE endblades have the widest notches, followed by SN-PGW. SN notch widths are smaller still, and SN-Small endblades unsurprisingly yield the smallest notch widths. SN-no notch endblades are not featured in this diagram because they do not have any notches. Referring to Figure 5.18, "typical" notch widths are generally within the range 2.08-3.64 mm, while "variant" notch lengths are generally within the range 1.75-2.89 mm. They overlap at 2.08-2.89 mm, and most "typical" and "variant" central tendency data fall within that range. Thus there is no significant difference between "typical" and "variant" endblades with regard to notch width. When that information is applied to Figure 5.31, SN-PGE central tendency data are partly within the "typical" range and partly within the overlapping range, SN-PGW central

tendency data are partly within the "variant" range and partly within the overlapping range, and most of SN and SN-Small central tendency data are below the "variant" range.

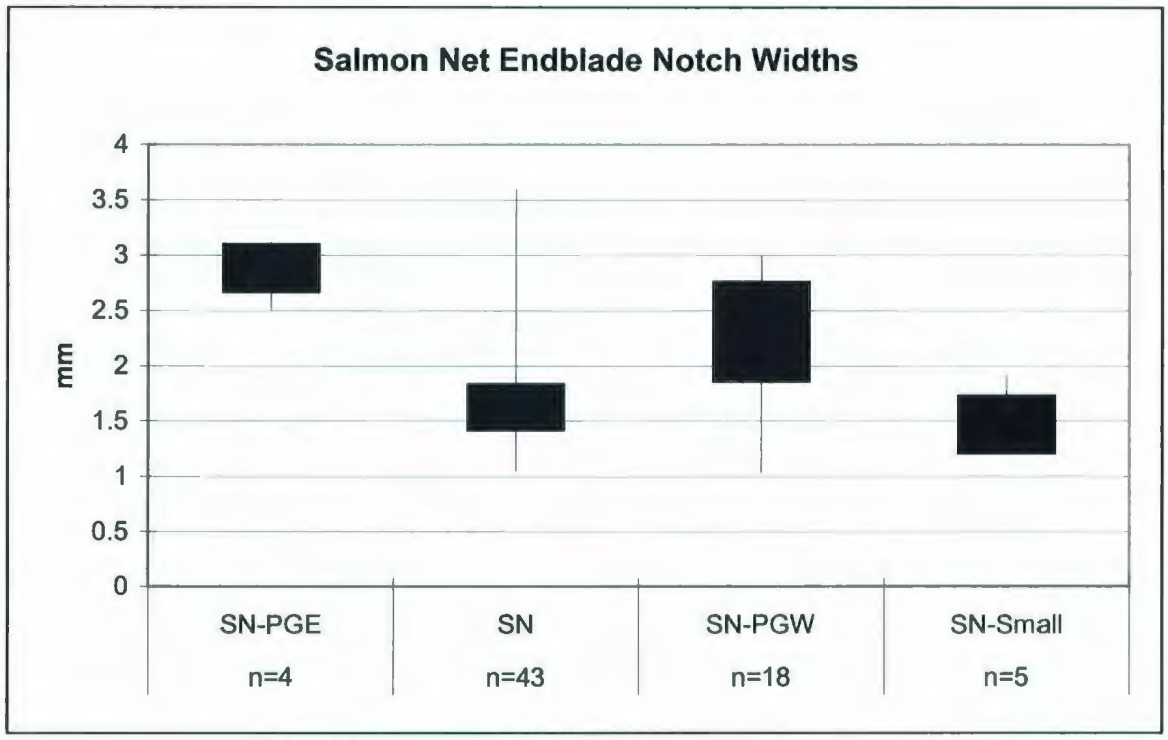

Figure 5.31: Salmon Net endblade notch widths.

Salmon Net Endblade Base Heights

Figure 5.32 demonstrates that SN-PGE endblades have the tallest base, followed by SN-PGW. SN bases are smaller still, and finally SN-Small endblades yield the smallest bases. Referring to the information in Figure 5.20, there was no difference between "typical" and "variant" base height; all "variant" base height central tendency data fell within the "typical" central tendency data range, which is 4.8-8.64 mm. Both

SN-PGE and SN-PGW central tendency data fall within this "typical" and "variant" data range, and both SN and SN-Small central tendency data fall below the range.

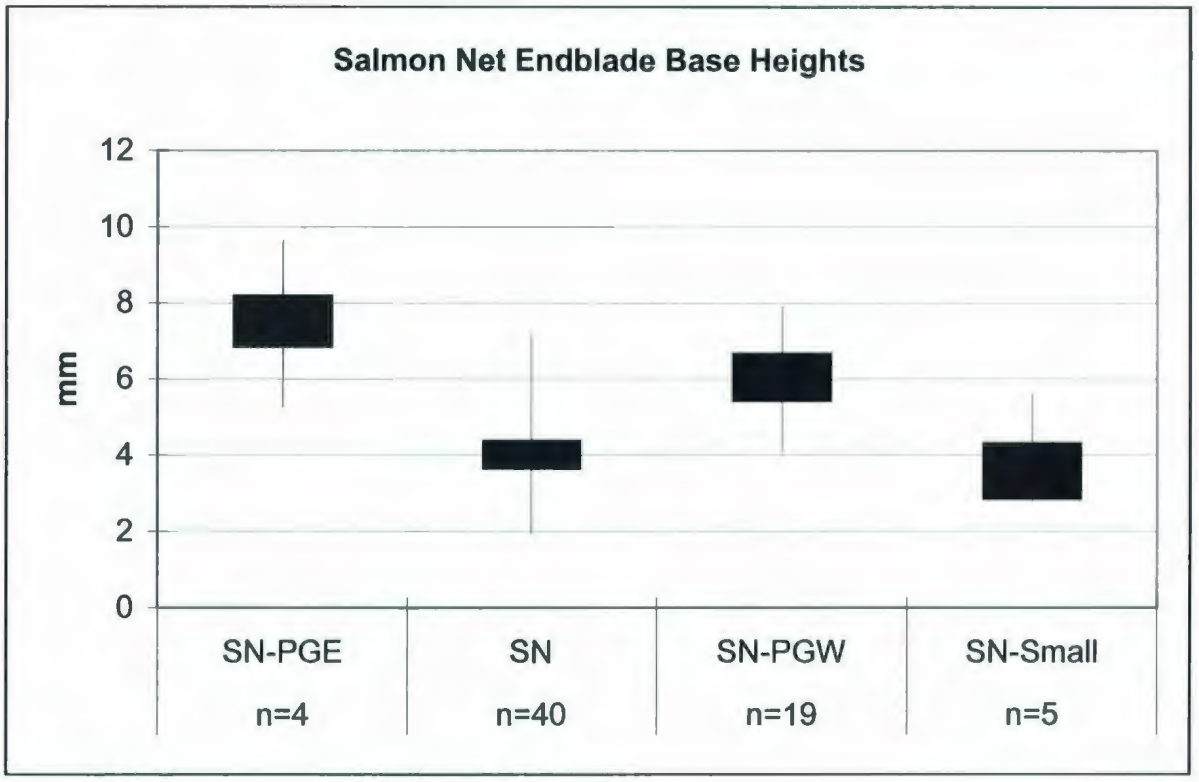

Figure 5.32: Salmon Net endblade base heights.

Salmon Net Endblade Serration

Figure 5.33 indicates that SN-PGW endblades are the most likely type of endblade in the Salmon Net endblade collection to be serrated. The percent of SN-Small serrated endblades is also high, though it is important to consider that there are only five small specimens; therefore 60% reflects just three serrated endblades. Finally, a small proportion of SN and SN-no notch endblades are serrated. Referring to the data presented in Figure 5.21, no "typical" endblades are serrated, while the combined PGW1

and PGW2 percent serration is 56%. Thus, SN-PGE data correspond with the "typical" trend, in that none of the specimens are serrated. SN-PGW and SN-Small data also match the "variant" trend, in that more than half of the samples are serrated. SN and SN-no notch percent serration are more than "typical" but less than "variant".

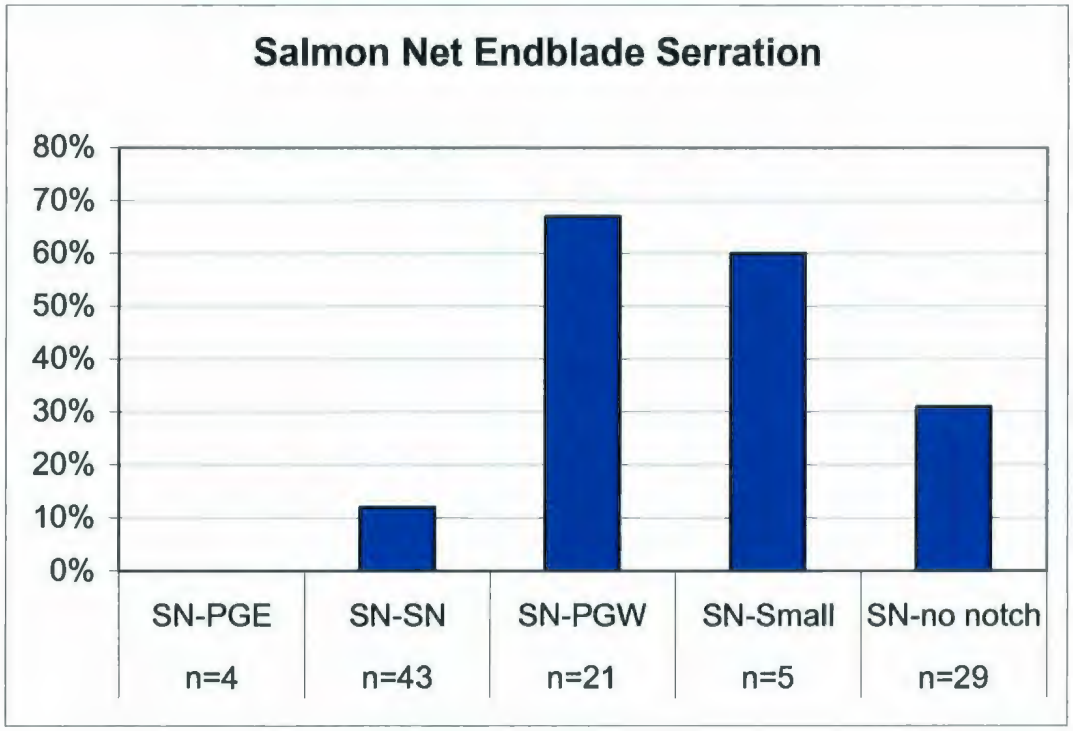

Figure 5.33: Salmon Net endblade serration.

Salmon Net Endblade Surface Grinding

According to Figure 5.34, 38% of SN-PGW type endblades are ground on the surface, which is a higher percentage than any other type of endblade in the Salmon Net assemblage. Fourteen percent of SN and 7% of SN-no notch endblades also contain surface grinding, while no SN-PGE or SN-Small endblades contain surface grinding. Referring to the data presented in Figure 5.22, PGW "variant" as opposed to PGE

"typical" endblades tend to contain surface grinding. The Salmon Net data correspond with this trend because SN-PGW as opposed to SN-PGE tends to contain surface grinding. SN-Small data also match the "typical" trend, in that none of the samples are surface ground. SN and SN-no notch endblades are more often surface ground than "typical" but less than "variant" type endblades.

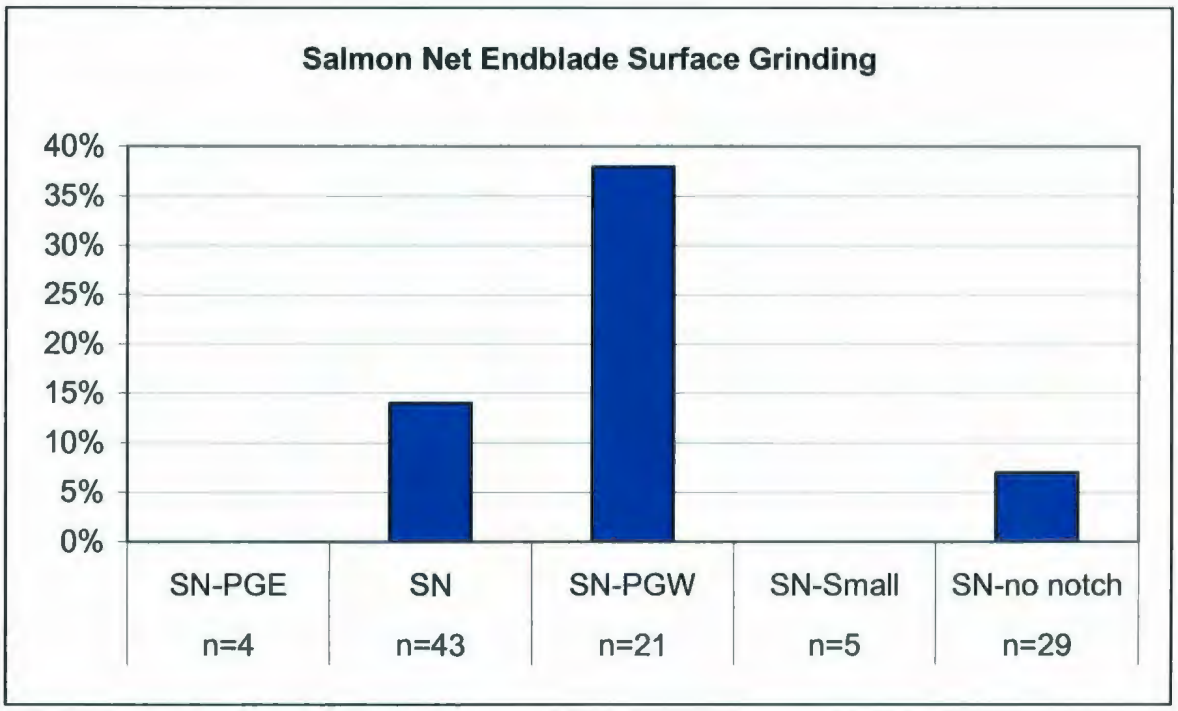

Figure 5.34: Salmon Net endblade surface grinding.

Salmon Net Basal Thinning

According to Figure 5.35, most Salmon Net endblades are bifacially thinned. The exception is SN-PGE type endblades; they reveal a range of basal thinning styles. It is important to note that SN-PGE basal thinning variation may be a result of such a small sample size. Referring to the data presented in Figure 5.23, most PGW "variant" and

PGE "typical" endblades are basally thinned on one face. Thus, Salmon Net does not follow the PGE "typical" and PGW "variant" trend because most of Salmon Net endblades are bifacially thinned.

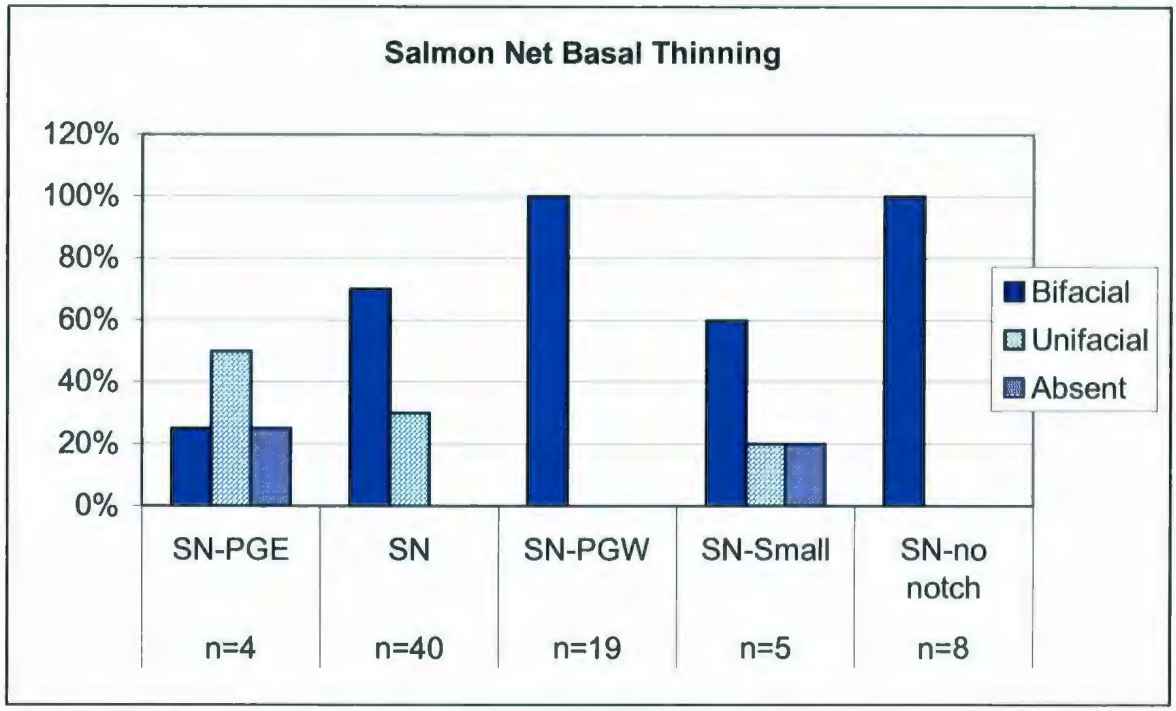

Figure 5.35: Salmon Net endblade basal thinning.

Salmon Net Endblade Base Shape

According to Figure 5.36, most Salmon Net endblades have a straight base. In addition, more SN-PGW, SN-Small and SN-no notch endblades than SN-PGE or SN endblades have concave bases. Referring to Figure 5.24, Groswater endblades in general tend to have a straight base. Furthermore, PGW "variant" as opposed to PGE "typical" endblade bases tend to be concave. Thus, SN-PGE and SN are similar to "typical"

endblades with regard to base shape, and SN-PGW, SN-Small and SN-no notch are similar to "variant" endblades with regard to base shape.

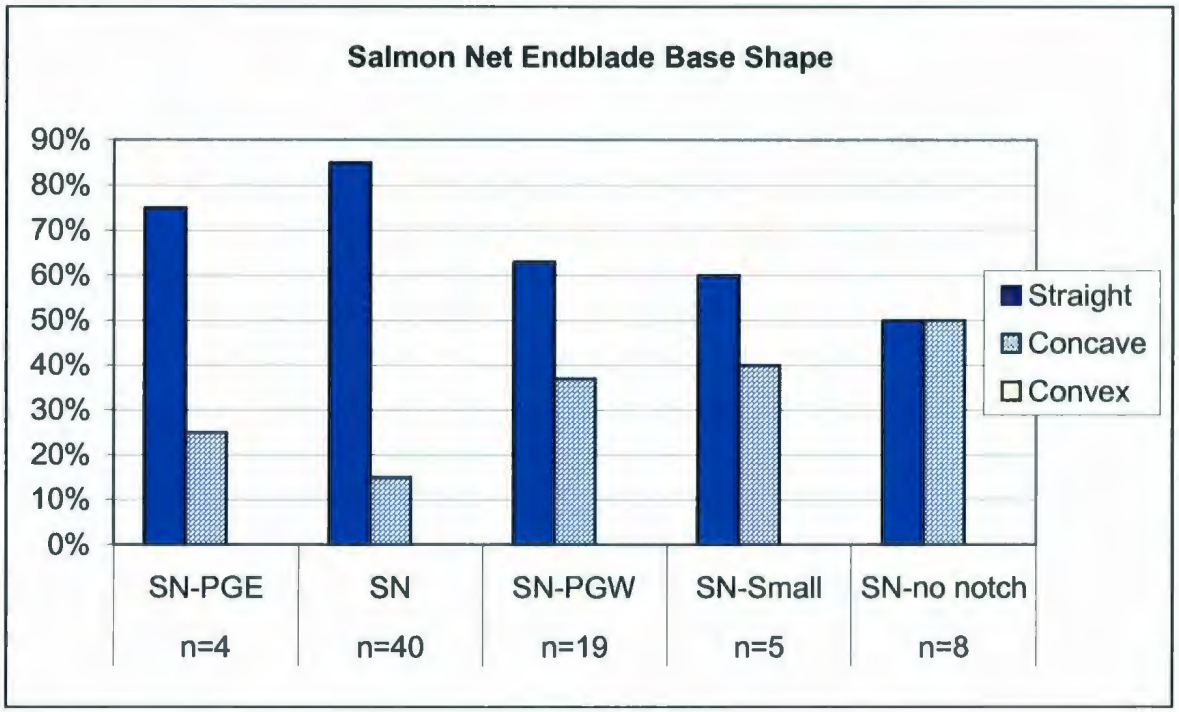

Figure 5.36: Salmon Net endblade base shape.

Salmon Net Endblade Summary

Table 5.2 summarizes the Salmon Net endblade attribute comparison and analysis presented above. From this data it is apparent that the Salmon Net assemblage contains five stylistic types of endblades. Notch length and base height are highlighted in Table 5.2 because they are particularly useful for telling apart the five stylistic types of endblades. There is a definite similarity between PGE "typical" endblades and the few examples of SN-PGE endblades in the Salmon Net assemblage. Most of the SN-PGE endblade attributes correspond with "typical" endblade attribute data. Notch length is the most valuable attribute in terms of characterizing "typical" endblades; in general

"typical" notch lengths are larger than "variant" notch lengths, by at least a millimeter. SN-PGE notch lengths are slightly longer than the "typical" notch length range, but not so much that they cannot be considered comparable. There is also a definite comparison between PGW "variant" endblades and SN-PGW endblades in the Salmon Net assemblage. Most of the SN-PGW endblade attributes correspond with "variant" endblade attribute data. Since notch length is the most valuable attribute in terms of characterizing "variant" endblades, particularly noteworthy is the fact that SN-PGW notch length central tendency data correspond with PGW "variant" notch length data. SN-Small endblade attributes are generally characterized as "O" in Table 5.2 because SN-Small endblades are smaller than most Groswater endblades and consequently their attribute data tend to be below the norm. SN-no notch endblades are distinguishable from the other four stylistic types because SN-no notch endblades are missing notches and a box base. It is worth noting that SN-no notch endblades are slightly smaller in terms of length and width than most "typical" or "variant" endblades. SN endblades stand out from the other four stylistically distinct types of endblades in the Salmon Net collection because of their base height and notch length. Base height is the most significant difference between SN endblades and the other types; SN endblades' base heights are smaller than both stylistically "typical" and "variant" endblades' base heights. SN endblades' notch lengths are generally larger than "variant" notch lengths and smaller than "typical" notch lengths.

Potential explanations for the apparent stylistic variety of Groswater endblades are discussed in Chapter 6.

	SN-PGE	SN	SN-PGW	SN-Small	SN-no notch
Endblade Length	-	-/O	-	O	O
Endblade Width	-	O	O	O	O
Endblade Length:Width	T	T/-	-	T/O	T/O
Endblade Thickness	T/-	V/-	-	O	-
Notch Length	O/T	O	V	V/O	
Notch Width	T/-	O	V/-	O	
Base Height	-	O	-	O	
Serration	T	T/V	V	V	T/V
Surface Grinding	T	T/V	V	T	T/V
Basal Thinning	-	O	O	O	O
Base Shape	T	T	V	V	V
SUMMARY	T	O	V	V/O	O

Table 5.2: Salmon Net endblade attribute data compilation.

Groswater Bifaces

Because they are made on large flakes Groswater bifaces come in various sizes and shapes. Because of this, it is fruitless to compare biface sizes and shapes to determine biface stylistic differences or similarities amongst the various Groswater assemblages used in this study. Renouf (2005) determined three attributes that could be used to figure out biface stylistic differences between the Phillip's Garden East and Phillip's Garden West sites. She found that Phillip's Garden West had smaller side-notches than Phillip's Garden East and that Phillip's Garden West bifaces were more likely to be ground and serrated. Thus these three attributes are used in this inter-site comparison to determine how variable Groswater bifaces are, particularly in Newfoundland.

Groswater Biface Notch Length

According to Figure 5.37, there is some variability among Groswater biface notch lengths. The combined central tendency data for PGE1 and PGE2, and thus "typical" bifaces, is 3.92-6.58 mm. The combined central tendency data for PGW1 and PGW2, and thus "variant" bifaces, is 1.74-3.19 mm. The fact that PGE "typical" and PGW "variant" biface notch length data do not overlap indicates there is a significant difference between "typical" and "variant" biface notch lengths. FC and PS central tendency data is totally within the "typical" range. Most of PG central tendency data, i.e. 62%, is within the "typical" range, the other 38% is above the typical range. CH and CC appear to have much longer notches than any of the other sites, i.e. above the "typical" range, but due to small sample sizes (two and three bifaces respectively) these data are unreliable. SN notch lengths are mixed (M); 57% are within the "variant" data range, 36% are in between the "typical" and "variant" ranges, and 5% are within the "typical" range.

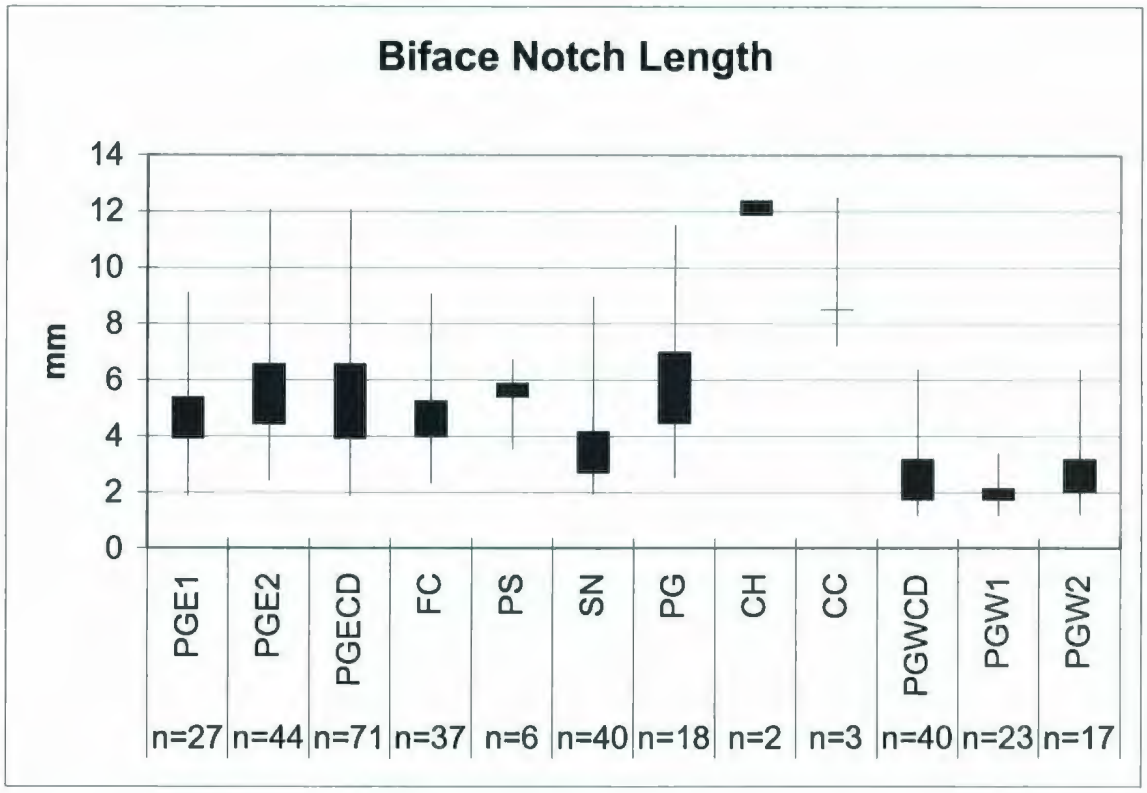

Figure 5.37: Groswater biface notch lengths.

Groswater Biface Serration

Figure 5.38 illustrates that PGW "variant" bifaces are more likely to be serrated than PGE "typical" bifaces. However, in general, Groswater bifaces are not likely to be serrated. As Figure 5.38 demonstrates, most Groswater collections do not have any serrated bifaces and only 8% of the Phillip's Garden West biface collection, which has the most serrated bifaces, is serrated. It is interesting to note that the SN assemblage falls in between the "typical" Phillip's Garden East collection and the "variant" Phillip's Garden West collection in terms of the average number of serrated bifaces.

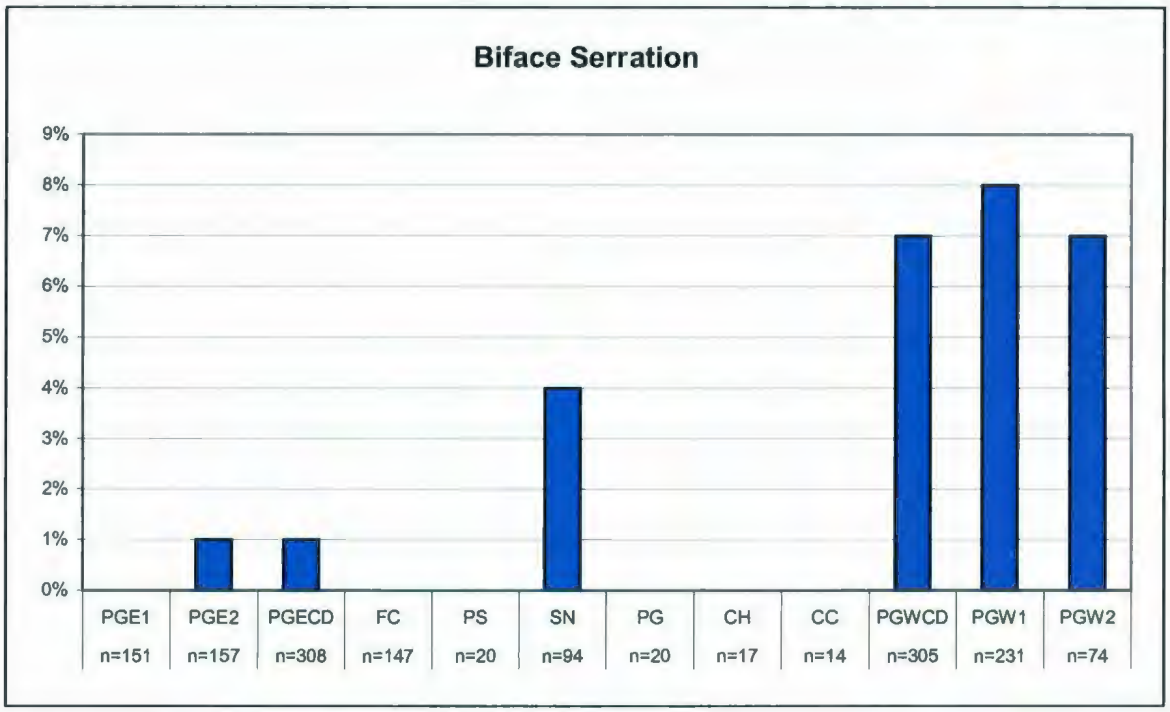

Figure 5.38: Groswater biface serration.

Groswater Biface Surface Grinding

Renouf (2005) explained that surface grinding is more common on Phillip's Garden West bifaces than Phillip's Garden East bifaces, and as Figure 5.39 indicates, FC is more like PGE1 and PGE2, and PS and SN are more like PGW1 and PGW2. However, as the figure also indicates, for the most part Groswater bifaces exhibit very little surface grinding.

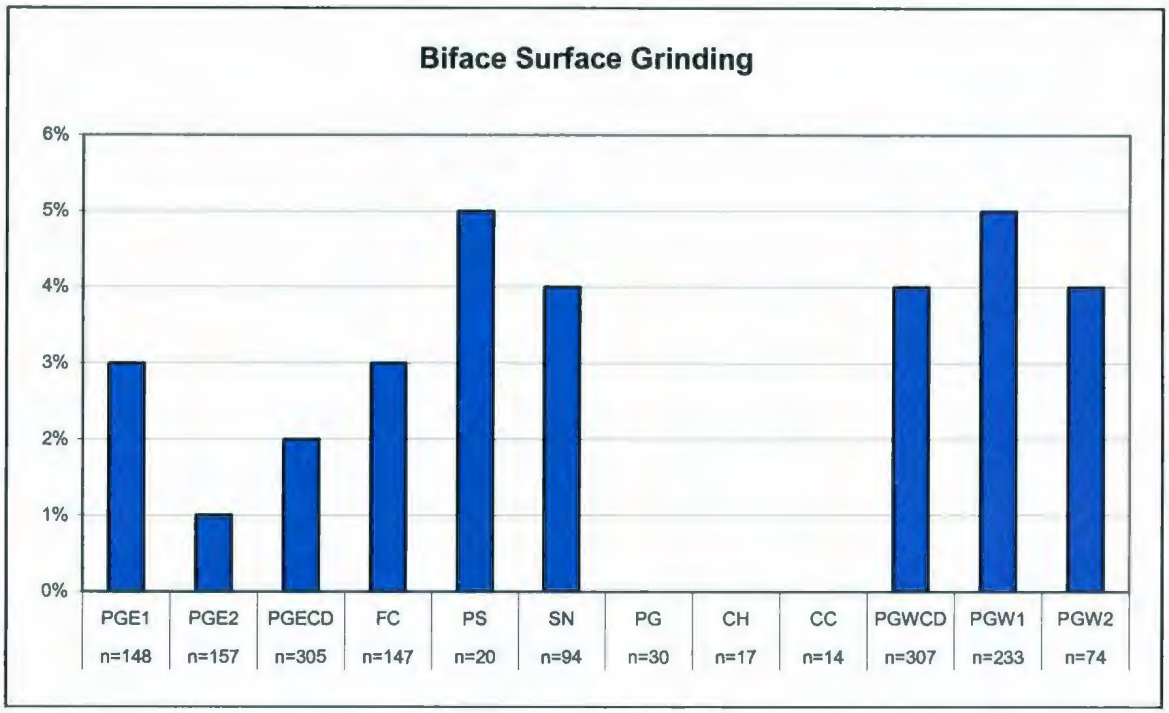

Figure 5.39: Groswater biface surface grinding.

Groswater Biface Summary

It is difficult to test and reveal stylistic differences or similarities among Groswater bifaces because they are fundamentally variable. However, with this said, from the information presented above, it seems that one biface attribute in particular, notch length, is useful in terms of determining stylistic differences or similarities between Groswater bifaces. There is a significant difference between PGE "typical" and PGW "variant" biface notch lengths; "typical" biface notch lengths are longer than "variant" biface notch lengths. As Table 5.3 indicates, most Groswater biface notch lengths, i.e. those from FC, PS and PG, are within the "typical" biface notch length data range. Salmon Net biface notch lengths are mixed; most are within the "variant" range, some are

between the "typical" and "variant" biface range and a portion are within the "typical" range. Serration and surface grinding are also fairly useful attributes in terms of determining biface stylistic variability. However the percentage of biface serration and surface grinding at any of the sites is very low and thus it not necessarily firm data in terms of establishing trends. However, according to Renouf (2005) and the figures above, Phillip's Garden West "variant" type of bifaces are more likely to be ground and serrated. Interestingly, Salmon Net falls in between "typical" and "variant" bifaces in terms of the amount they are serrated and is more like the Phillip's Garden West "variant" assemblage in terms of the proportion of its assemblage that is ground. Thus, from these data it appears that most Groswater sites yield "typical" bifaces, while Phillip's Garden West yields a "variant" form and Salmon Net a mixed biface assemblage.

	PGE1	PGE2	FC	PS	SN	PG	CC	CH	PGW1	PGW2
Biface Notch Length	T	T	T	T	M	T	O	O	V	V
Biface Serration	T	T	T	T	M	T	T	T	V	V
Biface Surface Grinding	T	T	T	V	V	O	O	O	V	V
SUMMARY	T	T	T	T	M	T	O	O	V	V

Table 5.3: Groswater biface data compilation.

Groswater Sideblades

Groswater sideblades vary according to size, shape, and whether they are ground and/or serrated. Renouf (2005) determined that Phillip's Garden West "variant" sideblades were more likely to be smaller, longer, serrated and semi-lunar shaped. To clarify, a semi-lunar shape means that one lateral edge is straight, while the other is convex. In contrast, Phillip's Garden East "typical" sideblades were primarily oval. Consequently all these attributes are considered in this intra-site comparison.

Groswater Sideblade Shape

Figure 5.40 shows that PGE "typical" Groswater assemblages are more likely to have oval-shaped sideblades, whereas PGW "variant" assemblages are more likely to contain semi-lunar-shaped sideblades. FC yields data similar to the PGE "typical" trend, whereas CC yields data similar to the "variant" trend. However, the CC assemblage only produced one sideblade specimen; therefore these data cannot characterize a trend. Interestingly PS, SN, PG and CH, have an almost equal percentage of both oval and semi-lunar sideblades in their assemblages. However, the PS, PG and CH assemblages only contain a small number of sideblades, and thus their data are not reliable in terms of characterizing trends. There are some triangular sideblades in a number of the collections, namely PGE1, PGE2, FC, SN, PGW1 and PGW2. Elongated sideblades are more likely to be found in "variant" collections like PGW1 and PGW2, but they are also present in the Salmon Net collection. Finally, circular sideblades are more likely to be found in "typical" collections like PGE1, but again they are also present in the SN

collection. Significantly, SN has the most varied collection with regard to sideblade shape, in comparison to the other Groswater sites in this study.

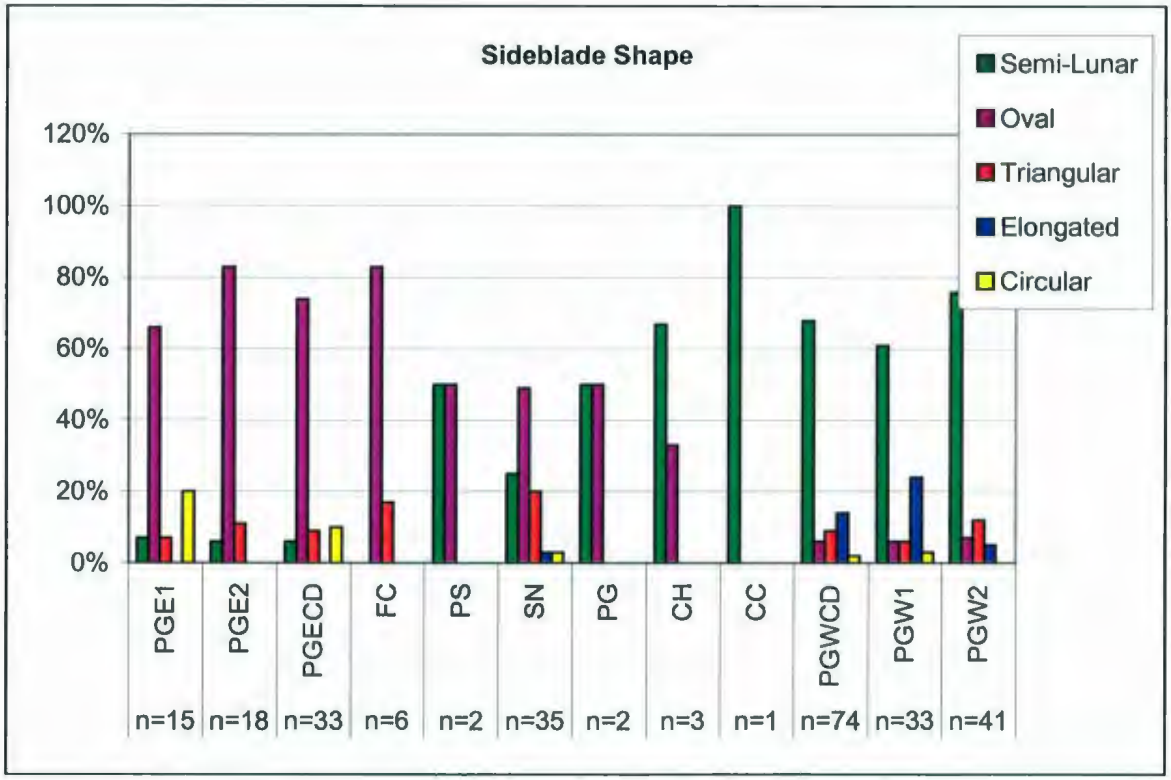

Figure 5.40: Groswater sideblade shape.

Groswater Sideblade Lengths

According to Figure 5.41, PGE "typical" Groswater sideblades are only slightly longer than PGW "variant" Groswater sideblades. The combined PGE "typical" central tendency data is 21.73-27.35 mm, and the combined PGW "variant" central tendency data is 19.01-23.55 mm. Therefore, "typical" and "variant" sideblade lengths overlap at 19.01-23.55 mm. One hundred percent of PGE1 central tendency data fall within the "typical" range, while 75% of the PGE2 central tendency data fall within the overlapping

"typical" and "variant" range. One hundred percent of PGW2 central tendency data fall within the "variant" range, while the PGW1 central tendency data are split, half within the "variant" range and half within the overlapping "typical" and "variant" range. There is not a significant difference between "typical" and "variant" sideblades in terms of length, since a significant portion of PGE and PGW data fall within the overlapping sideblade length range. PG central tendency data are within the overlapping range. FC sideblades are somewhat unusual because they yield the longest sideblade central tendency data of any of the Groswater collections. PS and SN sideblades are mixed in terms of length. Half of PS sideblades are within the overlapping range, while the other half is within the "typical" range; however PS only contains two specimens. Sixty-nine percent of SN sideblade lengths are within the "variant" range, while 23% are within the overlapping range and 8% are within the "typical" range. Finally, CH and CC central tendency data fall within the "variant" range; however, these assemblages only yield one specimen.

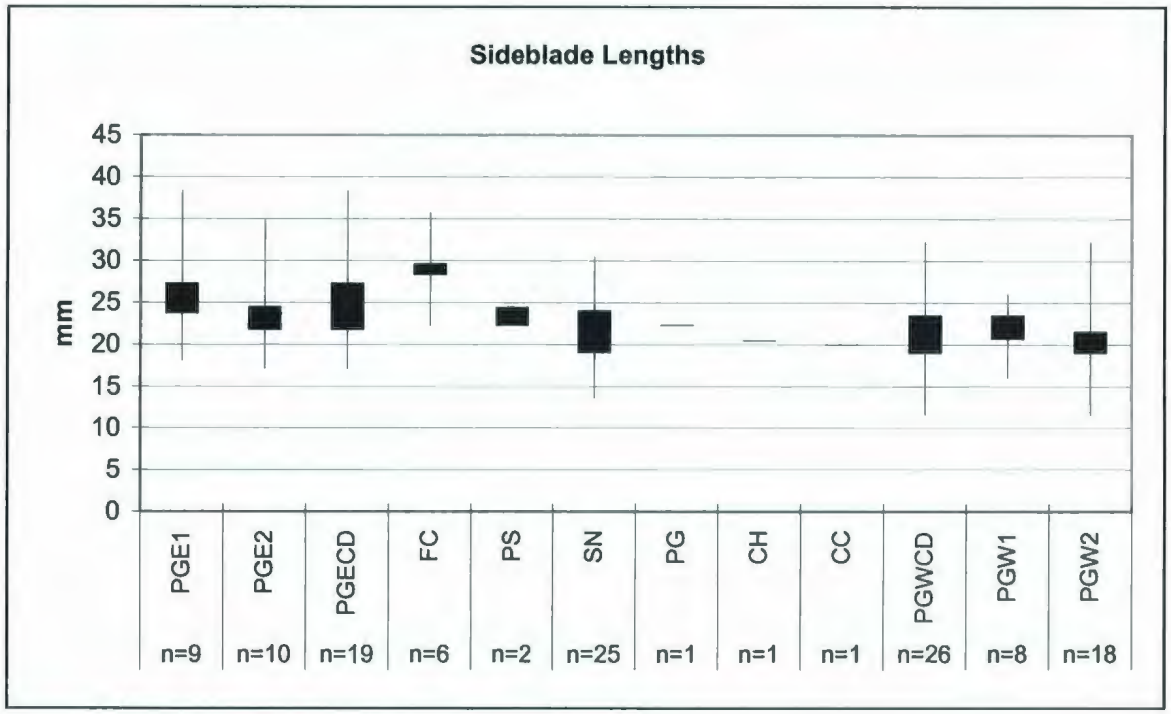

Figure 5.41: Groswater sideblade lengths.

Groswater Sideblade Widths

Figure 5.42 indicates that there is a significant difference between PGE "typical" and PGW "variant" sideblade widths. This is because the PGE central tendency data and PGW central tendency data do not overlap. PGE "typical" sideblade widths range between 13.01-19.33 mm, while PGW "variant" sideblade widths range between 6.12-8.65 mm. FC central tendency data fall within the "typical" range. One specimen from PS is in between the "typical" and "variant" ranges, while the other specimen is above the "typical" range. SN and PG sideblade width central tendency data are in between the "typical" and "variant" ranges. One sideblade from CH is within the "variant" width range, while the other is below the "variant" width range. CC central tendency data are

below the "variant" central tendency data. Note that PS, PG, CH and CC assemblages yield a small number of specimens; therefore their data are not reliable.

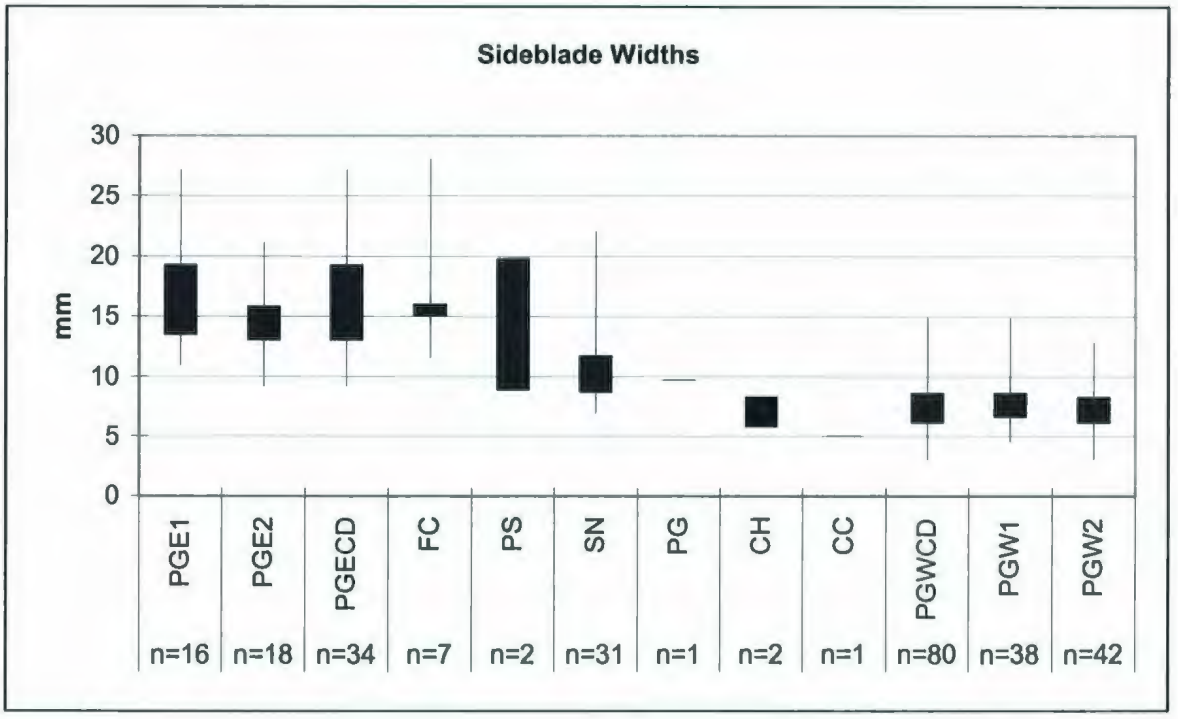

Figure 5.42: Groswater sideblade widths.

Groswater Sideblade Length:Width

Figure 5.43 shows that PGW "variant" sideblades are significantly more elongated than PGE "typical" sideblades. This is illustrated by the fact that the "typical" and "variant" central tendency data do not overlap. PGE combined central tendency data are 1.41-1.84 mm; while PGW combined central tendency data are 2.45-3.55 mm. FC central tendency data are within the "typical" range, while PS and CH central tendency data fall within the "variant" range. SN and PG central tendency data are in between the "typical" and "variant" ranges. Finally, CC central tendency data are above the "variant"

range. Again, PS, PG, CH and CC data trends are not reliable in this particular analysis because of small sample sizes.

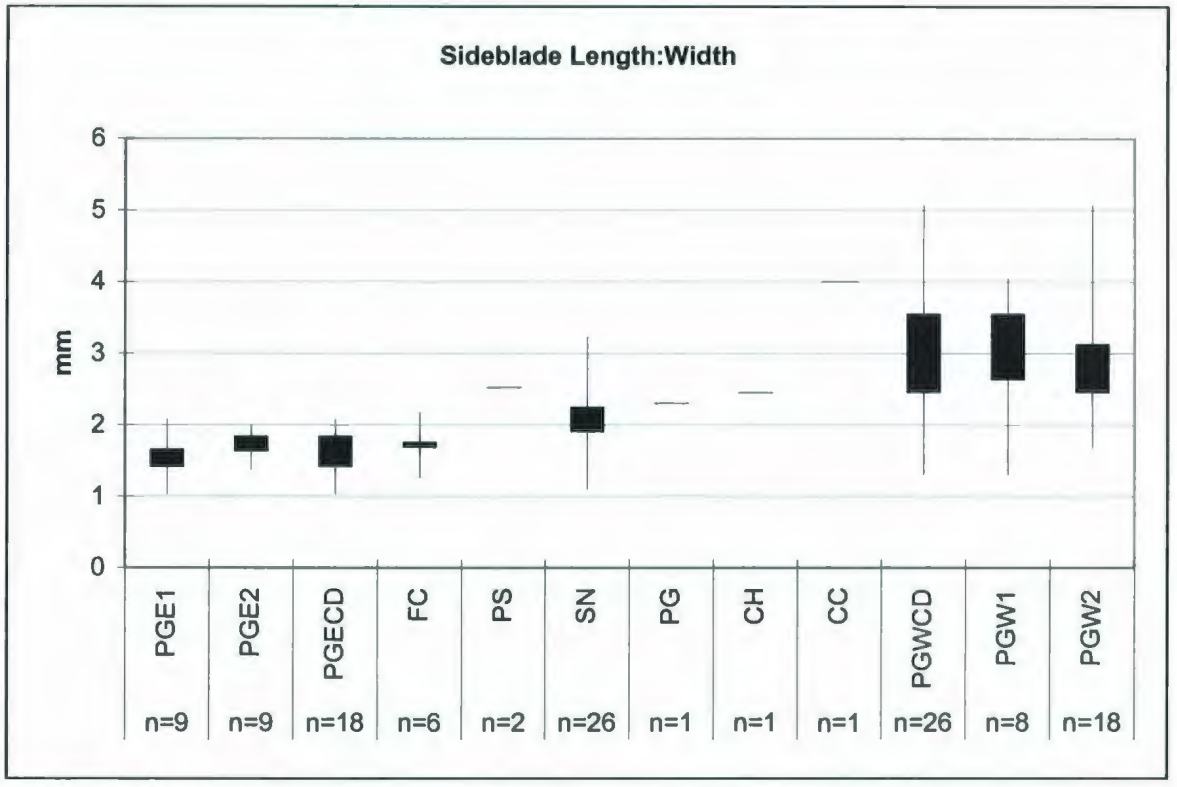

Figure 5.43: Groswater sideblade length to width ratio.

Groswater Sideblade Thickness

According to Figure 5.44, there is a significant difference between PGE "typical" and PGW "variant" sideblades' thickness since their central tendency data do not overlap. The range of PGE combined central tendency data are 2.16-3.01 mm, and PGW combined central tendency data are 1.55-1.99 mm. Evidently PGW sideblades tend to be narrower than the sideblades in every other assemblage considered here. Most of SN, PG and CH sideblade central tendency data fall within the "typical" range. Half of FC

central tendency data are within the "typical" range, and half are above the "typical" range. There are only two sideblade specimens in the PS assemblage; one is within the "variant" range, and the other is above the "typical" range. Finally the two-sideblade specimens in the CC assemblage yield data in-between "typical" and "variant" thickness data. Again, PS, PG, CH and CC data trends are not reliable in this context because of small sample sizes.

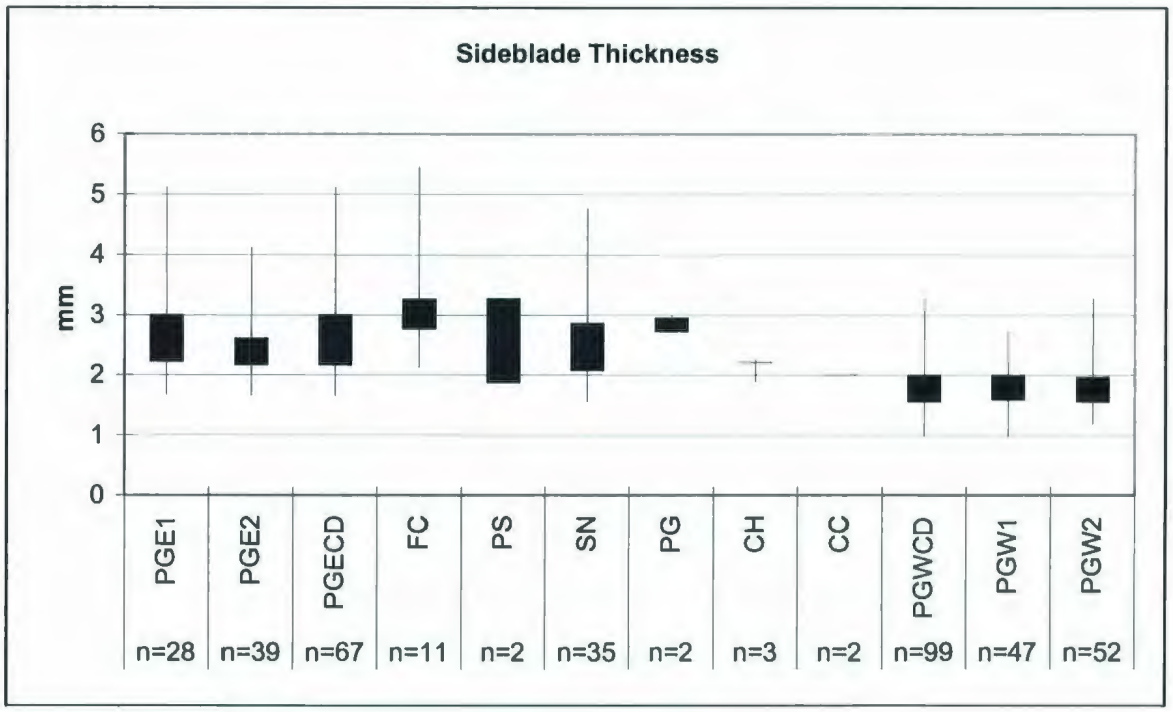

Figure 5.44: Groswater sideblade thickness.

Groswater Sideblade Serration

Groswater sideblade serration only occurs in a limited number of Groswater collections, namely "variant" collections like PGW1 and PGW2. Therefore it is

significant for serration to also appear in SN and CC, although in each of those assemblages only one specimen was serrated.

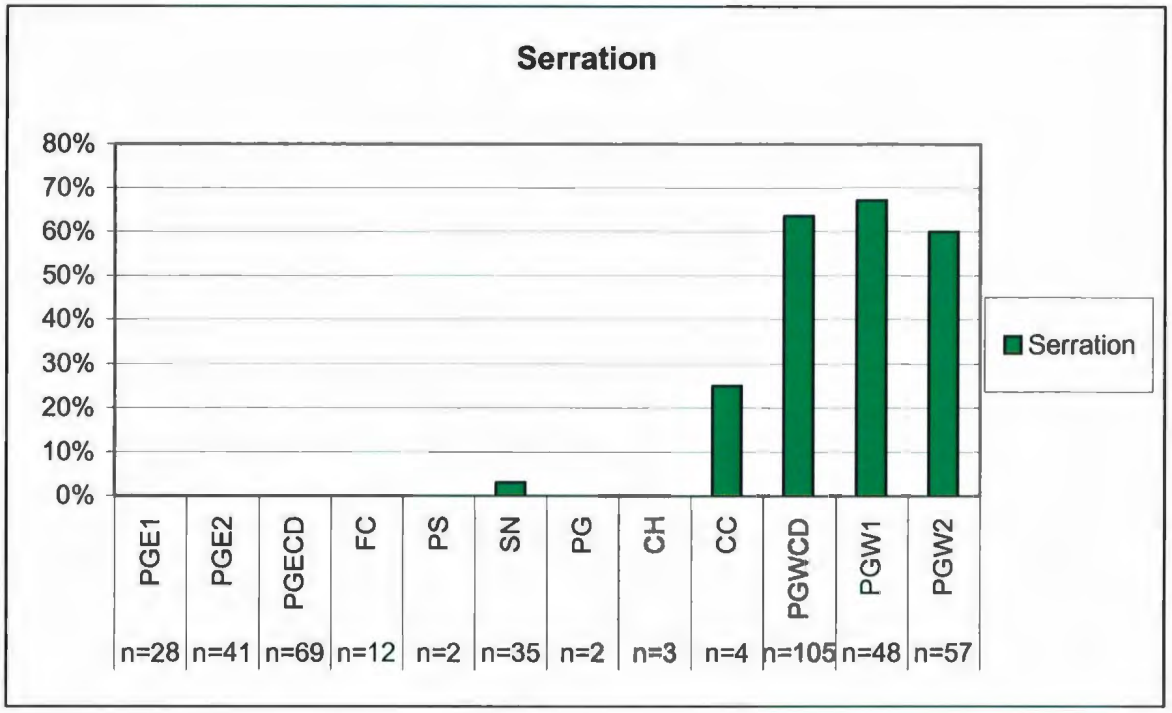

Figure 5.45: Groswater sideblade serration.

Groswater Sideblade Surface Grinding

Surface grinding appears in many Groswater sideblade assemblages, although, as Renouf (2005) explained, it only occurs on a small number of sideblades at any site. FC has proportionally the most sideblade surface grinding with 17% of its sample ground, which translates into two specimens.

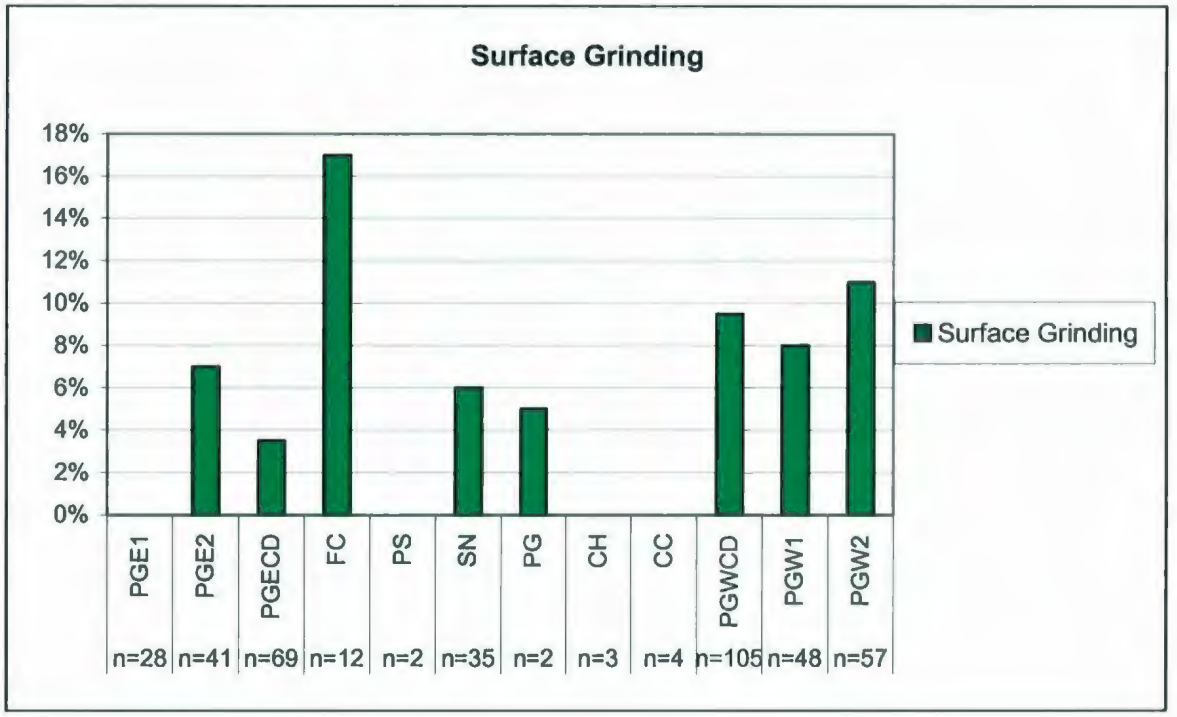

Figure 5.46: Groswater sideblade surface grinding.

Groswater Sideblade Summary

According to Table 5.3, which summarizes the sideblade attribute analysis presented above, some Groswater assemblages contain stylistically "typical" sideblades, two assemblages yield stylistically "variant" sideblades, and a number of assemblages yield a stylistic mix of "typical", "variant", and/or "other" sideblades. The attributes shape, width, length-to-width ratio, thichness and serration are highlighted above because they are particularly useful for determining sideblades' stylistic differences. Sideblade length and surface grinding were not highlighted because there is too much central tendency data overlap amongst the assemblages. One other assemblage besides PGE1

and PGE2 contains predominantly stylistically "typical" sideblades; it is FC. FC is characterized as a "typical" sideblade assemblage because most of the sideblades in the assemblage yield attribute data similar to "typical" sideblades. PGW1 and PGW2 contain predominantly stylistically "variant" sideblades. The CC assemblage is also characterized as "variant"; however the assemblage only one sideblade specimen and it is slightly distinct from "variant" sideblades. The CC specimen is characterized as "variant" because it is semi-lunar shaped. Besides its shape, the CC sideblade's other attributes are distinct from both "typical" and "variant" attributes. PS, SN, PG and CH are identified as "mixed" sideblade assemblages, primarily because they contain both semi-lunar, oval, and in SN's case triangular, elongated and circular sideblades. PS, SN, PG and CH sideblades yield varied data for the other sideblade attributes like width, length-to-width ratio, thickness and serration; some data are similar to "typical" sideblades' data, other data are similar to "variant" sideblades' data and some data are not like either "typical" or "variant" data. The fact that PS, SN, PG and CH yield mixed sideblade assemblages, with both stylistically "typical" and "variant" sideblades, likely accounts for why the data for width, length to width ratio, thickness and serration are so variable. It is important to reiterate that PS, PG, CH and CC only generated a small number of sideblades, which means their data are unreliable in terms of illustrating a stylistic trend.

	PGE1	PGE2	FC	PS	SN	PG	CH	CC	PGW1	PGW2
Sideblade Shape	T	T	T	M	M	M	M	V	V	V
Sideblade Length	-	-	O	M	M	-	V	V	-	-
Sideblade Width	T	T	T	O	O	O	V	O	V	V
Sideblade Length: Width Ratio	T	T	T	V	O	O	V	O	V	V
Sideblade Thickness	T	T	T/O	V/O	T	T	T	O	V	V
Sideblade Serration	T	T	T	T	T/O	T	T	O	V	V
Sideblade Surface Grinding	O	-	O	O	-	-	O	O	-	-
SUMMARY	T	T	T	M	M	M	M	V	V	V

Table 5.4: Groswater sideblade data compilation

Groswater Burin-Like Tools

Renouf (2005) determined two burin-like tool attributes that varied between the Phillip's Garden East and Phillip's Garden West assemblages, side-notch size and burin-like tool shape. Thus, these two attributes are evaluated with regard to the burin-like tool collections from the 10 Groswater assemblages in this study.

Groswater Burin-Like Tool Shape

According to Figure 5.47 burin-like tool shape frequency varies somewhat from site to site; however, in general most Groswater collections consist primarily of rectangular and trapezoidal burin-like tools, and some also have a small portion of triangular burin-like tools. Renouf (2005) noted the higher frequency of rectangular burin-like tools from Phillip's Garden East and a higher proportion of triangular burin-like tools at Phillip's Garden West. The FC assemblage data is similar to PGE "typical" data, while the SN and CC assemblages, which yield primarily trapezoidal burin-like tools, are more similar to PGW "variant" data. The PS and PG assemblages are unlike either "typical" or "variant" data since they yield half triangular, half rectangular and half rectangular, half trapezoidal respectively. It is important to note that there are only a few burin-like tool samples in the PS, PG and CC assemblages, thus their data are unreliable.

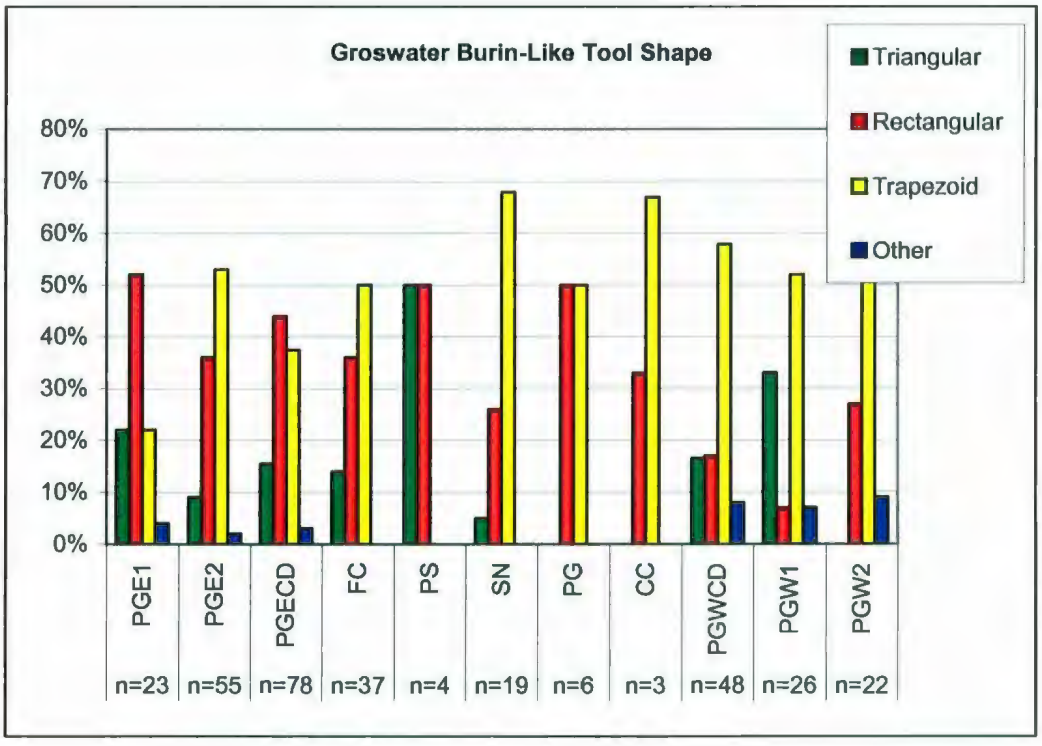

Figure 5.47: Groswater burin-like tool shape.

Groswater Burin-Like Tool Notch Length

According to Figure 5.48, there is a significant difference between PGE "typical" and PGW "variant" burin-like tool notch lengths, since PGE and PGW central tendency data do not overlap. The combined central tendency data range for PGE is 3.64-4.95 mm, and the combined central tendency data range for PGW is 1.51-2.06 mm. Essentially, PGE "typical" burin-like tool notch lengths are longer than PGW "variant" burin-like tool notch lengths. Over half of both FC and PG central tendency data is within the "typical" range and the rest is above the "typical" range. Most of PS and SN central tendency data are in between "typical" and "variant" burin-like tool notch length data, which means their burin-like tool notch lengths are characterized as "other". Even though PS and SN are characterized as "other" with regard to burin-like tool notch length, it is important to note that their data are more closely related to, and somewhat overlapping with "typical" data. It is also important to note that PS and PG yielded small sample sizes, and so their data are not reliable. Furthermore, the burin-like tools in the CC assemblage did not yield any measurable notch length data, which is why n=0 for CC in Figure 5.48.

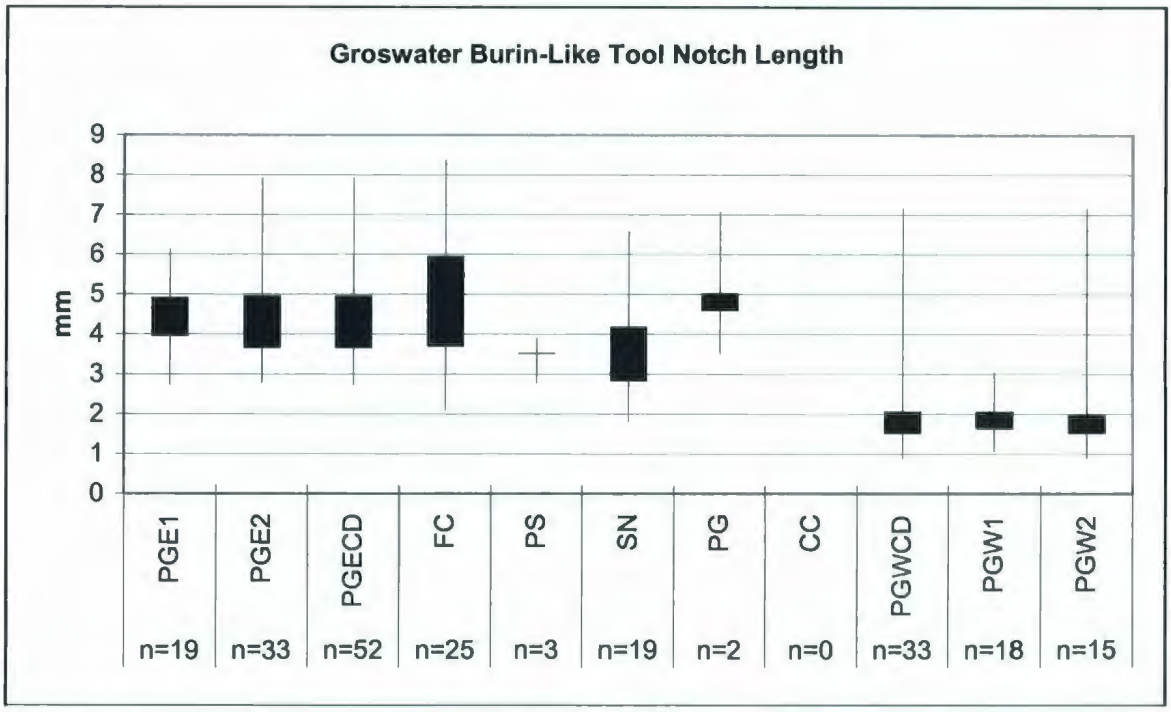

Figure 5.48: Groswater burin-like tool notch length.

Groswater Burin-Like Tool Notch Width

According to Figure 5.49, Groswater burin-like tool notch width is relatively consistent. The combined PGE central tendency data are 1.23-2.48 mm and the combined PGW central tendency data are 1.41-2.21 mm. Since PGW central tendency data are within the PGE central tendency data range, there is no significant difference between "typical" and "variant" burin-like tool notch widths. The central tendency data for FC, PS, SN and PG also fall within the PGE central tendency data range. Once again the burin-like tools in the CC assemblage did not yield any measurable notch width data, which is why n=0 for CC in Figure 5.49.

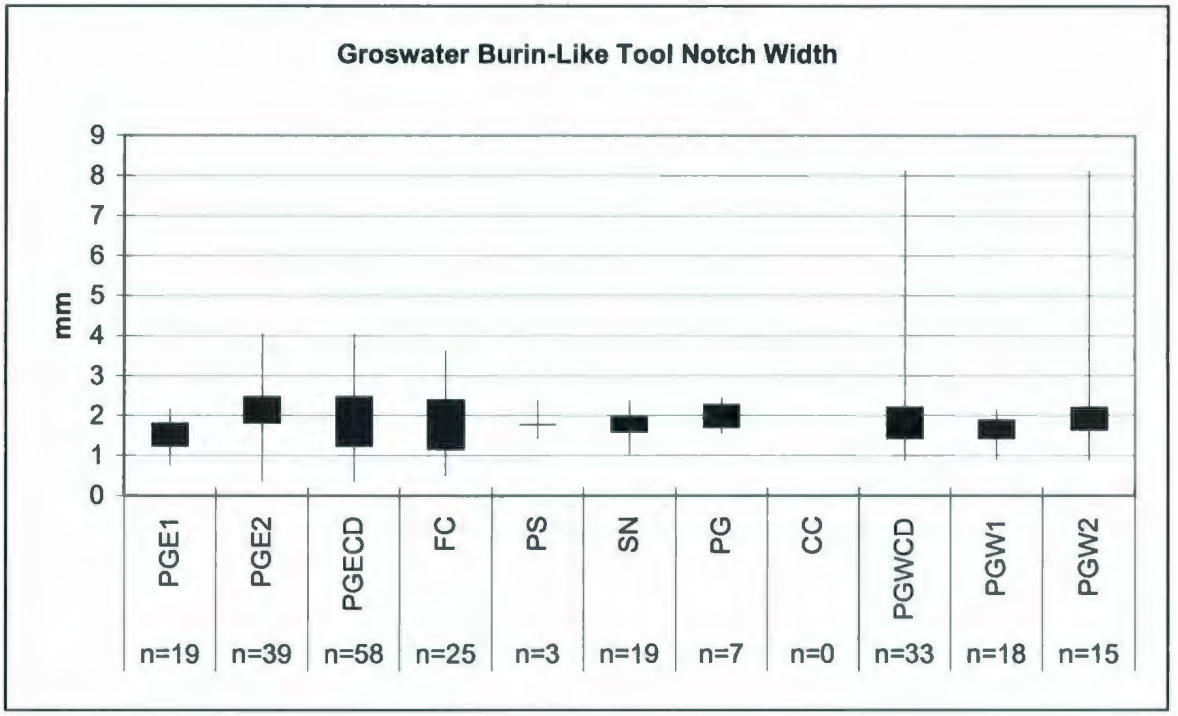

Figure 5.49: Groswater burin-like tool notch width.

Groswater Burin-Like Tool Notch Length:Width

Groswater burin-like tool notch length-to-width ratios are variable. PGE combined central tendency data are 1.72-3.52 mm and PGW combined central tendency data are .87-1.26 mm. The fact that PGE and PGW combined central tendency data do not overlap indicates that there is a significant difference between PGE "typical" and PGW "variant" burin-like tool notch length-to-width ratios. The majority of FC, PS, SN and PG burin-like tool notch length-to-width ratio central tendency data are within the "typical" range. Once again the burin-like tools in the CC assemblage did not yield any measurable notch length to width ratio data, which is why n=0 for CC in Figure 5.50.

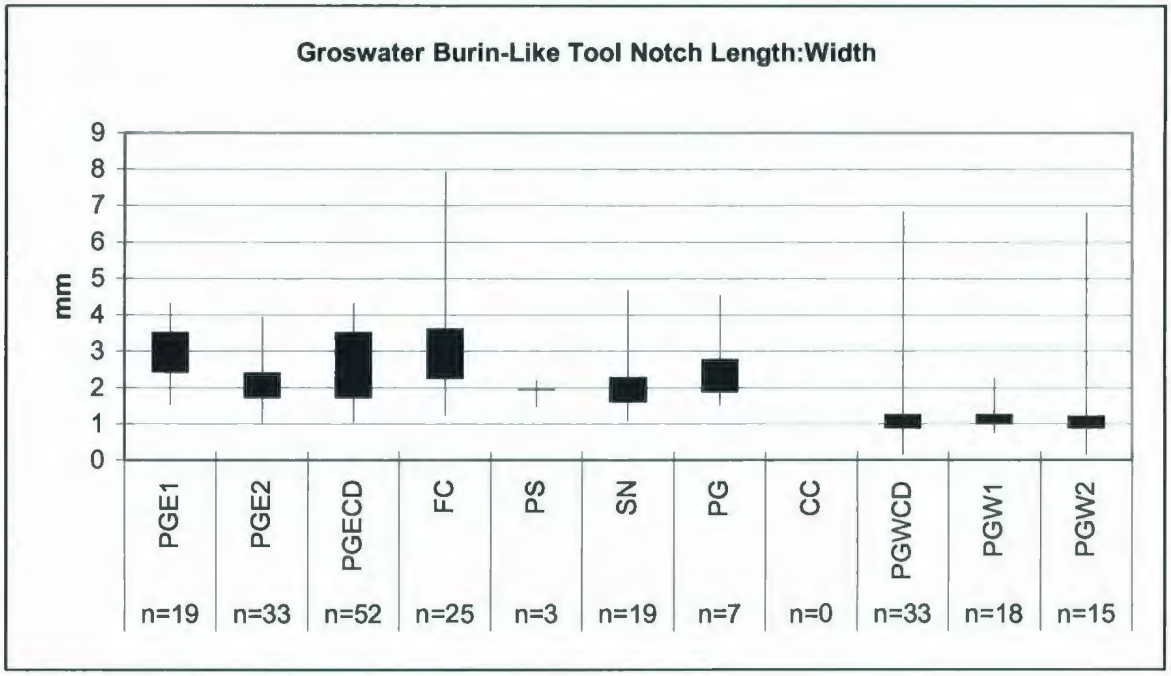

Figure 5.50: Groswater burin-like tool notch length:width.

Groswater Burin-Like Tool Summary

As Renouf (2005) explained, and the information above supports, PGE yields a "typical" burin-like tool collection and PGW yields a "variant" burin-like tool assemblage. The burin-like tools attributes that most reliably define the stylistic differences between Groswater burin-like tools are shape and notch length, therefore they are highlighted above. In this attribute analysis, FC burin-like tools correspond with the PGE assemblages and thus can be classified as "typical". The PS burin-like tool attribute data does not correspond with either the "typical" or "variant" burin-like tool attribute data trends, likely because of a small sample size (n= 4 specimens), so it is classified as "other". The SN burin-like tool attribute data are also different from either "typical" or

"variant" burin-like tool attribute data trends. SN burin-like tool shape frequency is similar to the PGW "variant" trend, but SN burin-like tool notch lengths and notch length-to-width ratios do not correspond with the "variant" trends. It is especially noteworthy that most of SN burin-like tool notch lengths are in between "typical" and "variant" notch lengths, because it sets SN burin-like tools apart from both "typical" and "variant" burin-like tools. PG burin-like tools are most similar to "typical" burin-like tools, based on the attribute notch length and length-to-width ratio. The fact that PG burin-like tool shape frequency is classified as "mixed" is likely due to a small sample size (n=6 specimens). CC burin-like tools are classified as "variant" based on shape frequency. CC burin-like tools do not generate any measurable notch data, which means that notch data could not be considered for assessing CC burin-like tools' stylistic trend. It is important to note the small sample sizes from PS, PG and CC because generalizing a stylistic trend for these sites is difficult. CH is absent from this artifact attribute comparison because its assemblage did not include any burin-like tools.

	PGE1	PGE2	FC	PS	SN	PG	CC	CH	PGW1	PGW2
BLT Shape	T	T	T	O	V	M	V		V	V
BLT Notch Length	T	T	T	O	O	T			V	V
BLT Notch Width	-	-	-	-	-	-			-	-
BLT Notch Length:Width Ratio	T	T	T	T	T	T			V	V
SUMMARY	T	T	T	O	O	T	V		V	V

Table 5.5: Groswater burin-like tool attribute data compilation.

Groswater Endscrapers

A "typical" Groswater endscraper is rectangular with ears, but there are also a large proportion of triangular endscrapers, many of which have an asymmetrical distal edge found in Groswater assemblages. These attributes are compared in this section to determine whether there are any stylistic patterns amongst the 10 assemblages.

Groswater Endscraper Shape

Triangular endscrapers dominate most Groswater collections. However there is also a divide, whereby the greatest proportions of rectangular endblades come from PGE1, PGE2, FC and PS. SN, PG, CH, CC, PGW1 and PGW2 have proportionally fewer rectangular endscrapers and more triangular endscrapers. Since PGE is in the first group and PGW is in the second group, "typical" endscrapers are more likely to rectangular and "variant" more likely endscrapers are to be triangular.

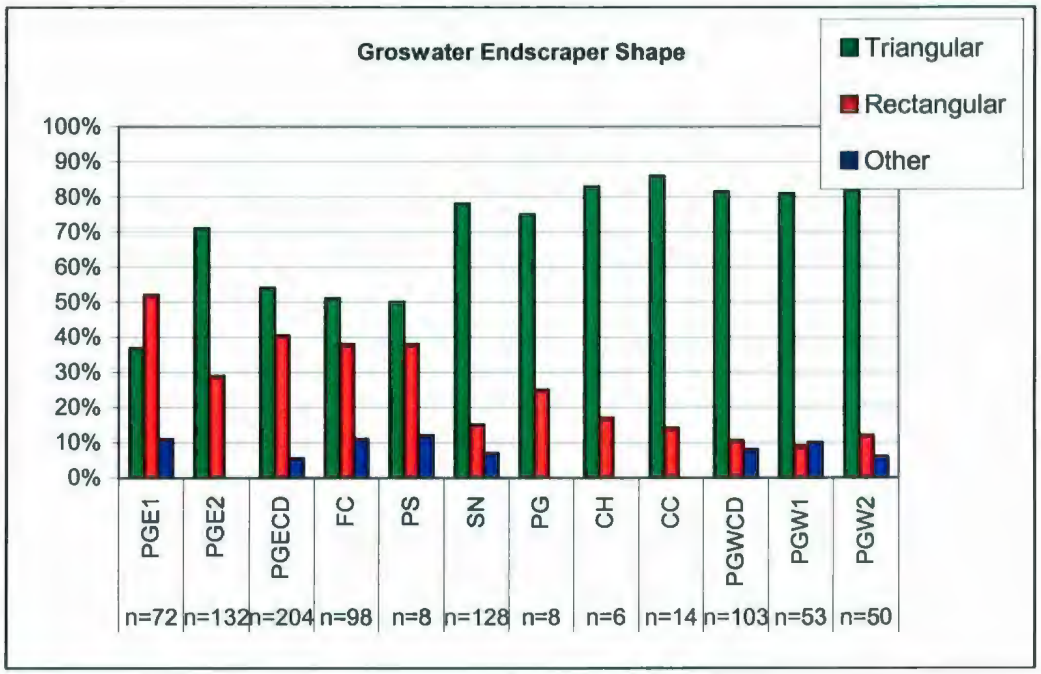

Figure 5.51: Groswater endscraper shape.

"Eared" Endscrapers

Every Groswater assemblage has at least some "eared" scrapers in its collection. An "eared" endscraper is one in which the distal edge is longer than the tool body or base, creating what looks like "ears" on the distal, scraping edge. There are proportionally more "eared" scrapers in the PGE1, PGE2, and FC collections, which are three of the four sites with proportionally the most rectangular endscrapers. Thus, "typical" scrapers are more likely to be "eared" than "variant" scrapers. Furthermore, there seems to be a relationship between endscraper shape and whether a scraper is eared. Rectangular endscrapers are more likely to be eared.

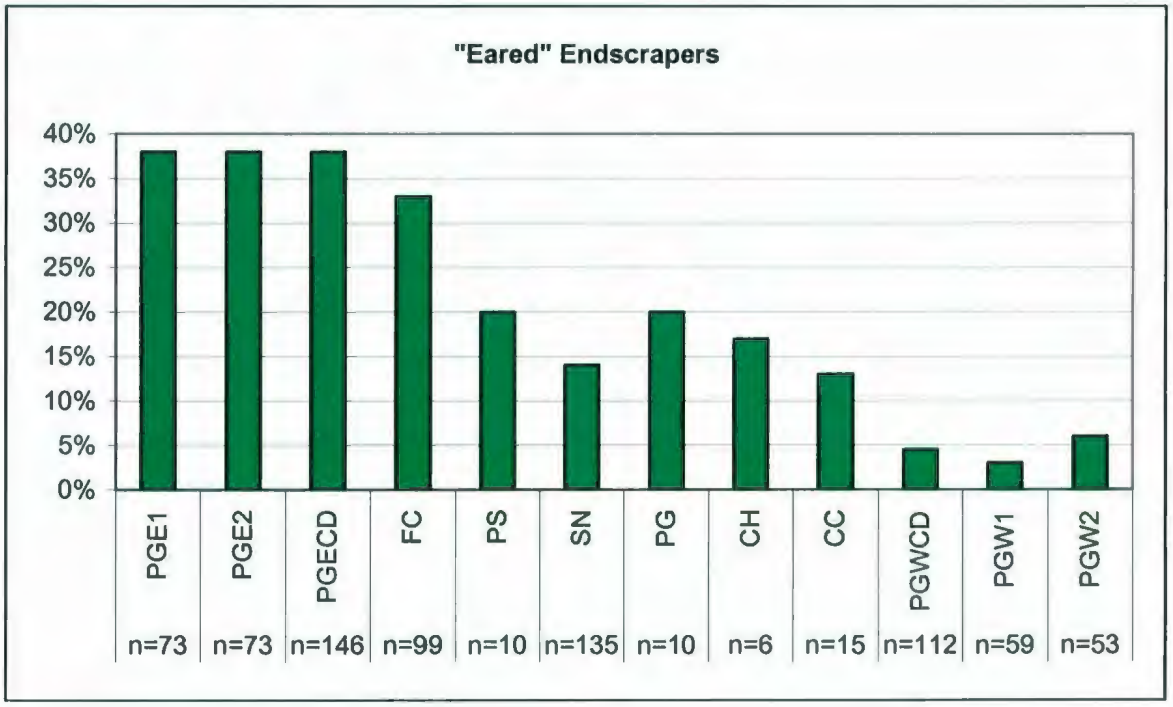

Figure 5.52: "Eared" endscrapers.

Groswater Endscrapers with Asymmetrical Distal Edge

Every Groswater assemblage in this study has at least some endscrapers with asymmetrical edges. Interestingly, this figure has a contrasting trend to the previous one. FC, SN, PG, CH, CC, PGW1 and PGW2 have the highest proportions of endscrapers with asymmetrical distal edges, which corresponds with those sites that have proportionally the most triangular endscrapers. Thus, "variant" endscrapers are more likely than "typical" endscrapers to have an asymmetrical distal edge. As with the previous chart, there seems to be a relationship between endscraper shape and whether a scraper has an asymmetrical edge. However it is important to note that although triangular endscrapers are more likely to have asymmetrical distal edges, not all of them do.

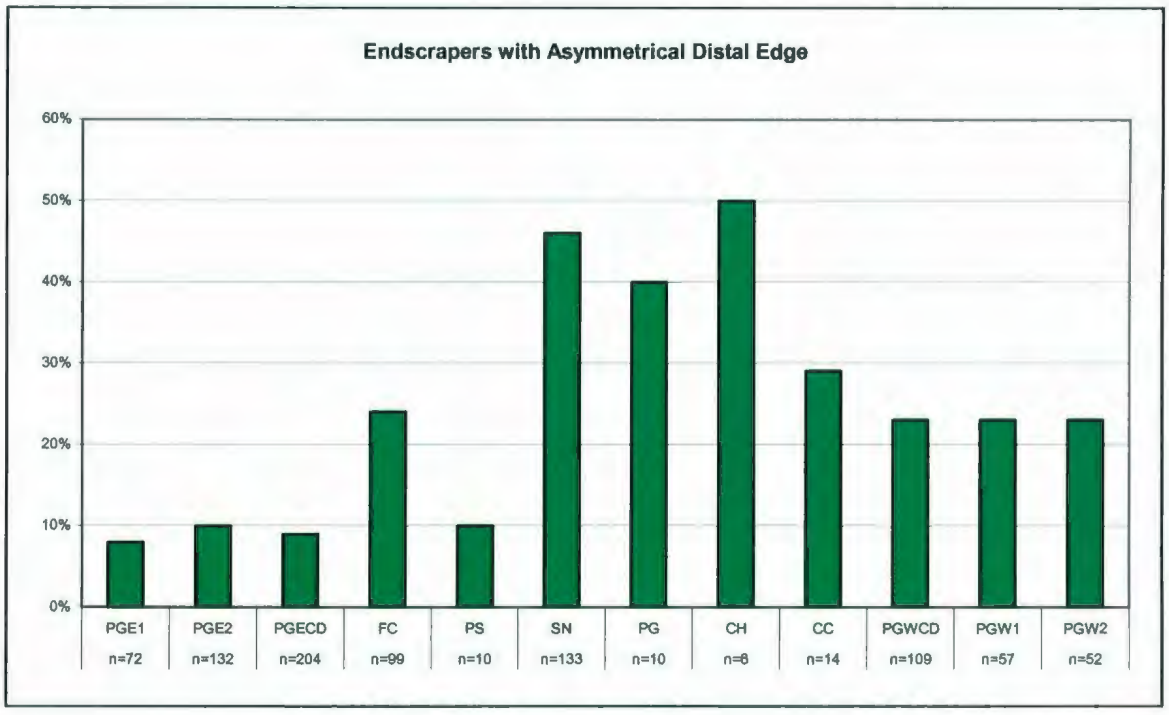

Figure 5.53: Groswater endscrapers with an asymmetrical distal edge.

Groswater Endscraper Summary

Groswater assemblages generally have stylistically mixed endscraper collections, with specimens that are rectangular or triangular, some may be "eared", and some that have an asymmetrical distal edge. After comparing these attributes on endblades from 10 assemblages, some stylistic trends are apparent. There is a significant difference between PGE "typical" and PGW "variant" endscraper collections; "typical" endscrapers are more likely to be rectangular and "eared", whereas "variant" endscrapers are more likely to be triangular with an asymmetrical distal edge. FC and PS yield similar attribute data to PGE "typical" Groswater endscrapers; therefore these endscraper collections are characterized as "typical". CC endscrapers are stylistically most similar to "variant" Groswater endscrapers; therefore this assemblage is characterized as a "variant" Groswater assemblage. SN, PG and CH are related to "variant" endscraper collections in terms of shape frequency; however, they have less "eared" endscrapers and more asymmetrical distal edges than "variant" endscrapers. These endscraper collections have been characterized as "other" since they do not correspond completely with either "typical" or "variant" endscraper data trends.

	PGE1	PGE2	FC	PS	SN	PG	CC	CH	PGW1	PGW2
Endscraper Shape	T	T	T	T	V	V	V	V	V	V
"Eared" Endscrapers	T	T	T	M	M	M	M	M	V	V
Endscrapers with Asymmetrical Distal Edge	T	T	V	T	O	O	V	O	V	V
SUMMARY	T	T	T	T	O	O	V	O	V	V

Table 5.6: Groswater endscraper attribute data compilation.

Groswater Sidescrapers

Sidescrapers are typically only a small percentage of Groswater collections; often assemblages yield just a couple of specimens. Consequently, stylistic comparisons are somewhat unreliable. However, two distinct forms occur, crescent shaped and those fashioned on burin-like tools (BLTs), and it is worth noting what percentage of each occurs in the different assemblages.

Groswater Sidescraper Shape

Figure 5.54 shows us that the PGE and PG sidescraper collections are composed primarily of BLT-sidescrapers, while CC and PGW are dominated by crescent-shaped sidescrapers. FC and SN sidescraper collections yield both forms. It is important to note that the sample sizes for five of the seven of these sideblade collections are very small. No sideblades were recorded in the PS collection. Furthermore sidescrapers occasionally occur in irregular shapes, besides crescent and on BLTs, which accounts for missing data in Figure 5.54.

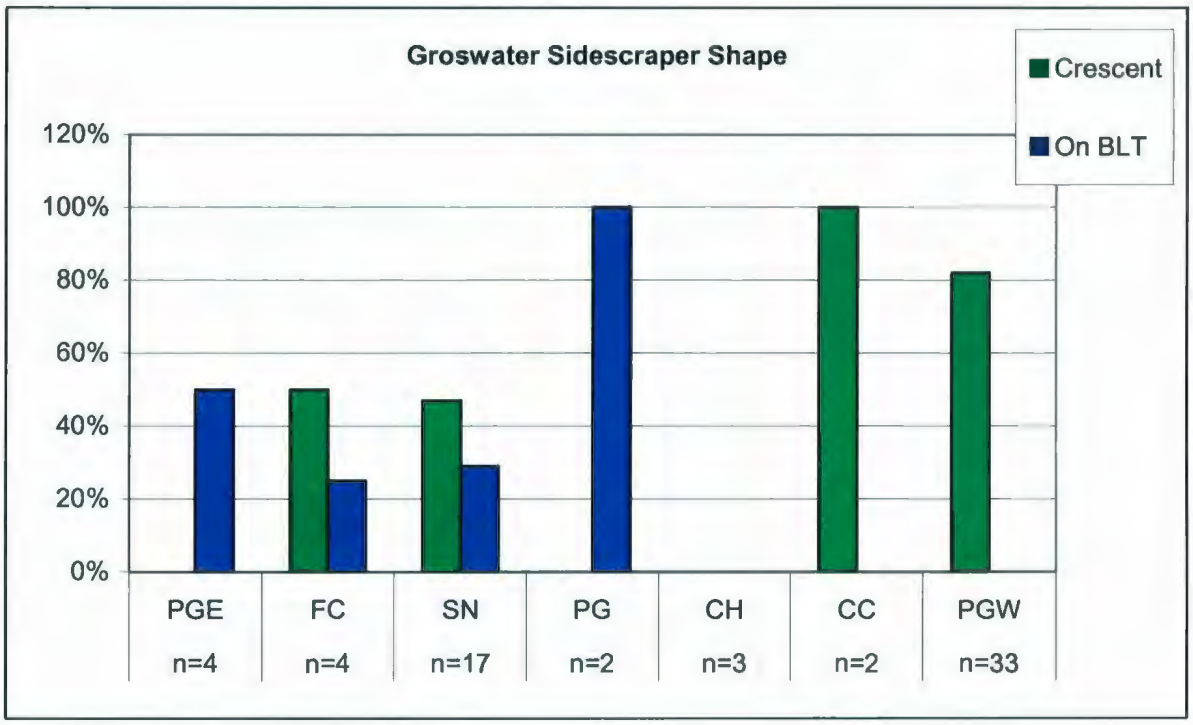

Figure 5.54: Groswater sidescraper shape.

Groswater Sidescraper Summary

Table 5.6 clarifies the fact that PGE1, PGE2 and PG are stylistically "typical" sidescraper assemblages. FC and SN are stylistically mixed sidescraper assemblages, since they contain both BLT-sidescrapers and crescent-shaped sidescrapers. Finally, CC, PGW1 and PGW2 sidescraper assemblages are characterized as stylistically "variant".

	PGE1	PGE2	FC	PS	SN	PG	CC	CH	PGW1	PGW2
Sidescraper Shape	T	T	M		M	T	V		V	V

Table 5.7: Groswater sidescraper attribute data compilation.

Conclusion

In this chapter, Groswater attributes from six types of Groswater lithic tools were examined and compared from 10 assemblages in order to demonstrate whether those six types of Groswater tools are stylistically uniform or variable. According to the data presented above, Groswater tools are stylistically variable. Stylistic variability was demonstrated by the fact that the central tendencies of some attributes varied from site to site. For example, the central tendencies of Groswater endblade notch and base size, biface notch size, sideblade size and burin-like tool notch size in particular varied from site to site. As well, some qualitative attributes like tool shape, the amount of serration and surface grinding also varied from site to site. It is important to note that although stylistic variability does exist, Groswater tools are not so different as to be unrecognizable Groswater. The fact that most tools exhibit characteristic Groswater attributes, such as side-notching, box-bases, surface grinding, etc., indicates shared Groswater cultural affinity, even if the size and shape of the attribute varies. Furthermore, the data range for each attribute and therefore each tool type is similar enough that it indicates shared Groswater cultural affiliation.

In the following chapter the data from each tool type for each assemblage are combined so that each assemblage's material culture stylistic association can be determined. In other words, each assemblage is characterized as a "typical" assemblage, a "variant" assemblage, neither or both, based on the information collected in this chapter. Chapter 6 also includes a discussion of some of the issues related to interpreting

'style', possible reasons for why material culture stylistic variability exists and how it affects our understanding of Groswater social and economic behaviors.

Chapter 6

Data Interpretation

An Inter-Site Comparison

In this chapter the results of all six artifact categories for each site from the previous chapter are combined and discussed to draw conclusions about the stylistic composition of each assemblage. Chapter 5 revealed that Groswater tools can be stylistically "typical", "variant", some endblades are "Salmon Net-type" and some tools do not fit into any category so they are classified as "other". This chapter compiles these data per site and shows how each assemblage as a whole yields stylistically "typical", "variant", "mixed" or "other" tools. Assessing each assemblage in its entirety provides the foundation for describing and understanding Groswater material culture stylistic variability, particularly in Newfoundland.

Phillip's Garden East 1 Data Compilation

The Phillip's Garden East 1 assemblage can, as a whole, can be classified as "typical". This is not surprising since the definition of a "typical" Groswater assemblage was based on material from this assemblage as well as the later Phillip's Garden East 2 assemblage (below). To reiterate, Phillip's Garden East is the standard for "typical" Groswater Palaeoeskimo material culture.

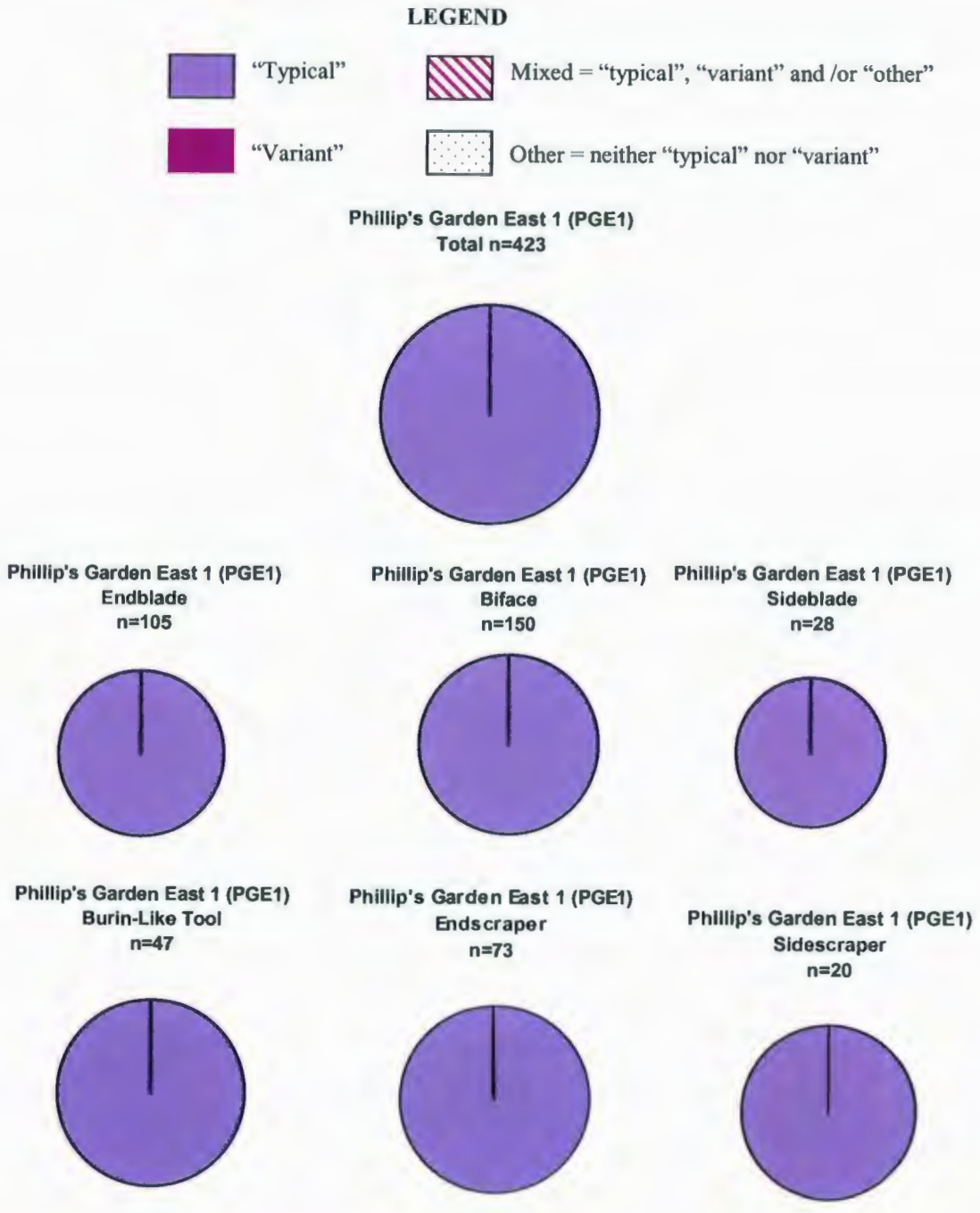

Figure 6.1: Phillip's Garden East 1 data compilation pie charts.

Phillip's Garden East 2 Data Compilation

The Phillip's Garden East 2 assemblage can also, as a whole, be classified as "typical". This is not surprising since the definition of a "typical" Groswater assemblage was based on material from this assemblage as well as the earlier Phillip's Garden East 1 assemblage (above).

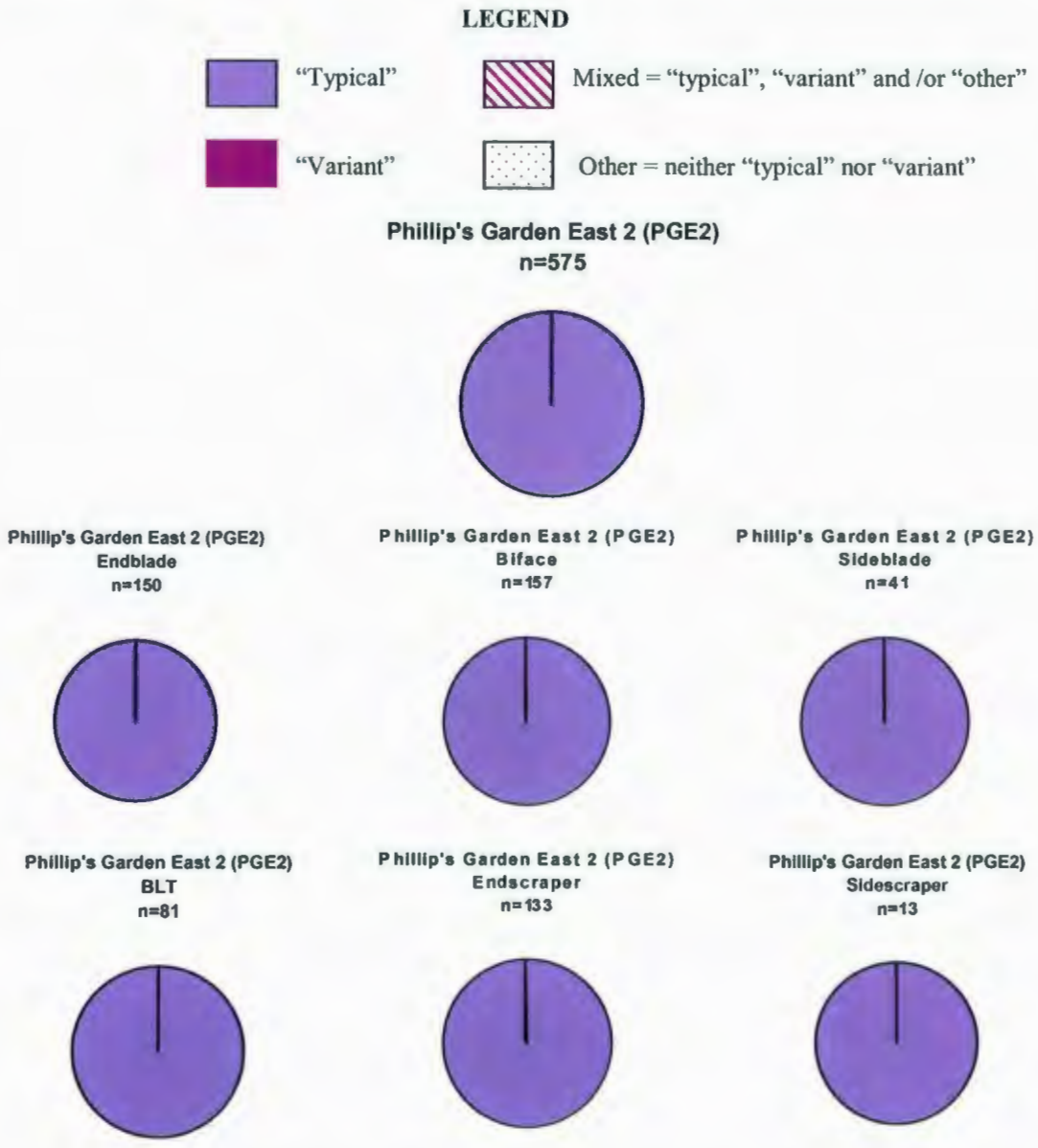

Figure 6.2: Phillip's Garden East 2 data compilation pie charts.

Factory Cove Data Compilation

The Factory Cove assemblage is composed primarily of "typical" Groswater material culture; however, a significant portion of Factory Cove endblades are designated as "other", which means the Factory Cove assemblage is somewhat "mixed". The occurrence of stylistically "mixed" sidescrapers is less significant feature because of a small sample size.

The Factory Cove assemblage has usually been characterized as a "typical" Groswater assemblage (Auger 1985; Lavers 2005), and clearly that characterization is mostly accurate. However, as discussed in Chapter 3, several researchers, including myself, noted that a significant proportion of Factory Cove endblades were not stylistically identical to "typical" or "variant" Groswater endblades (Auger 1985, 1986; Leblanc 1996). The endblade attribute analysis in Chapter 5 verified that over half of the Factory Cove endblades have shorter box bases than "typical" or "variant" endblades. Essentially, over half the Factory Cove endblades are similar to short-based "Salmon Net-type" endblades, while the rest are stylistically similar to "typical" Groswater endblades. Therefore, the Factory Cove assemblage can and should be characterized as "typical" but there is also an endblade component that does not stylistically coincide with "typical" Groswater material culture.

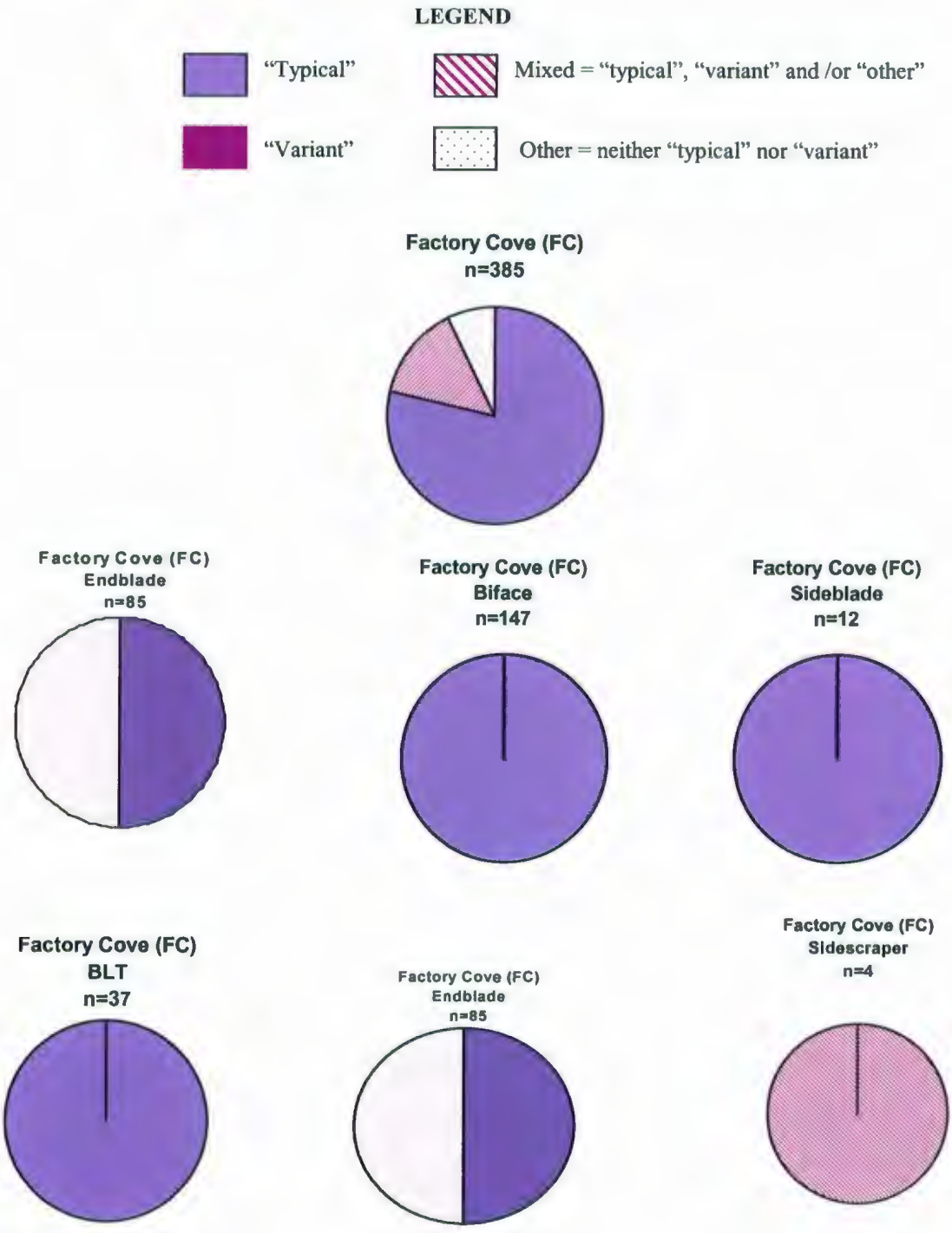

Figure 6.3: Factory Cove data compilation pie charts.

Party Site Data Compilation

The Party Site assemblage is designated in this analysis as a stylistically "mixed" Groswater assemblage because even though it most closely resembles a "typical" Groswater assemblage, some tools are stylistically distinct from "typical" Groswater tools. It is important to consider that the Party Site assemblage is small in comparison to some of the other Groswater assemblages and therefore the data cannot reliably establish trends. About half the Party Site endblades are stylistically distinct from "typical" Groswater endblades; some have larger notches than "typical" Groswater endblades and they all have larger or smaller bases than "typical" Groswater endblades. Even though some Party Site endblades have larger notches and bases than "typical" Groswater endblades, they closely resemble "typical" Groswater endblades. The Party Site endblades with short bases resemble "Salmon Net-type" endblades. There are two sideblade specimens in the Party Site collection; one resembles a stylistically "typical" sideblade, and the other resembles a stylistically "variant" sideblade, which is why Party Site sideblades are designated as stylistically "mixed". The Party Site burin-like tools are designated as "other" because of their shape and notch lengths. Half the Party Site's burin-like tools are triangular, which is a high percentage in comparison to other Groswater sites. In addition, Party Site burin-like tool notch lengths measure in between "typical" and "variant" notch lengths.

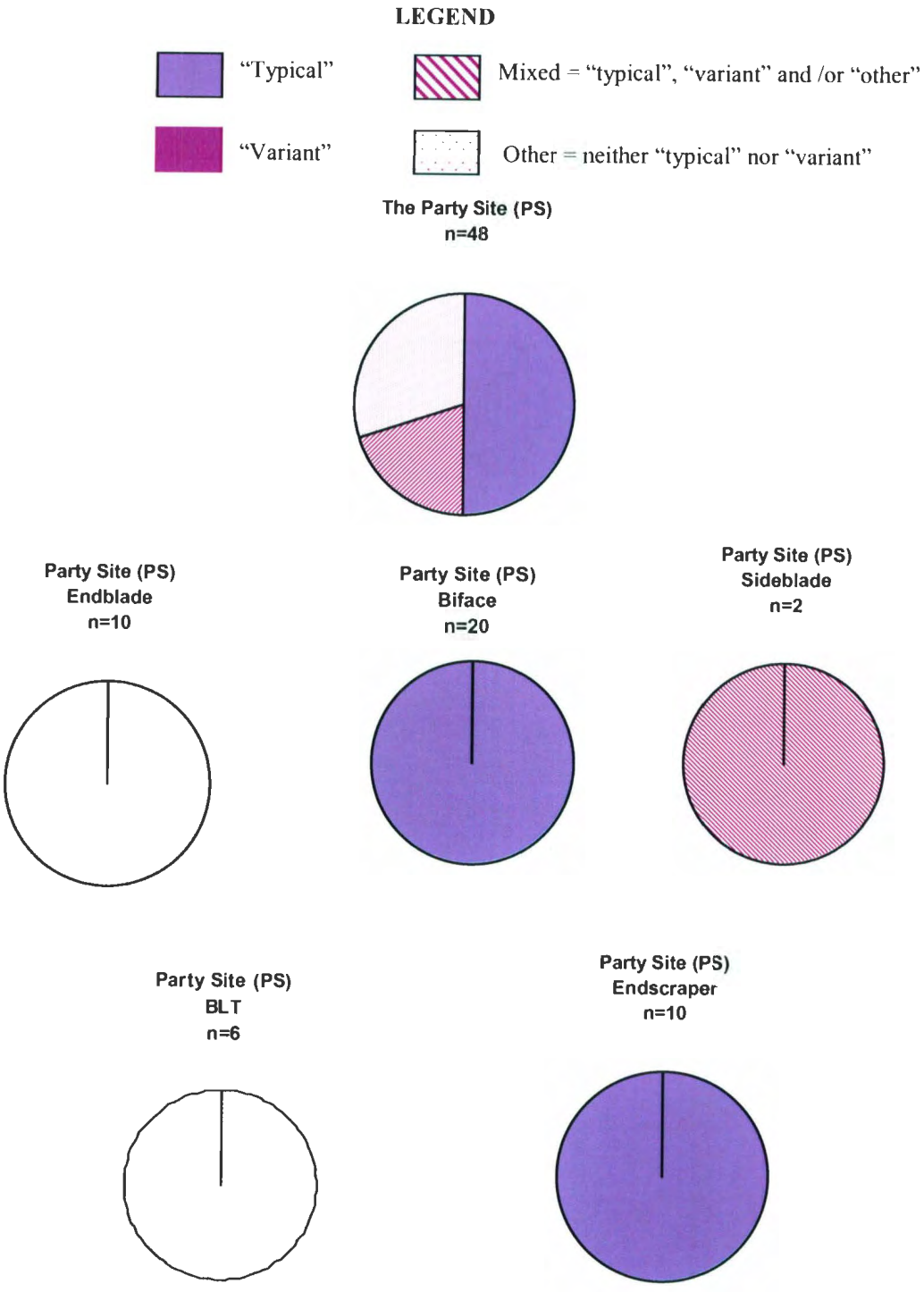

Figure 6.4: The Party Site data compilation pie charts.

Salmon Net Data Compilation

The Salmon Net assemblage is characterized here as a "mixed" Groswater assemblage since it includes examples of both stylistically "typical" and "variant" tools. There are also examples of "other" endblades, burin-like tools and endscrapers in the assemblage. They are characterized as such because they are stylistically distinct from both "typical" and "variant" tools.

An initial assessment of the Salmon Net assemblage prompted this investigation because there appeared to be a mix of stylistically "typical" and "variant" Groswater material culture, as well as a stylistically distinct form of Groswater endblade in the assemblage. A comparison of Groswater tool attributes has verified this initial assessment; both stylistically "typical" and "variant" artifacts are represented in the Salmon Net assemblage. Furthermore, most of the endblades in the Salmon Net assemblage are stylistically distinct from "typical" or "variant" endblades because they have smaller base heights and their notch lengths are in between "typical" and "variant" notch lengths. This stylistically new and distinct endblade is referred to as "Salmon Net-type" since it was first identified in and dominates the Salmon Net collection. Salmon Net burin-like tools are also unique. Most are characterized as "variant" in terms of their shape; however, like Salmon Net endblades, most Salmon Net burin-like tool notch lengths are in between the average "typical" and "variant" notch lengths. Salmon Net endscrapers are similar to "variant" endscrapers in terms of shape quantities; however there are proportionally more "eared" endscrapers and endscrapers with an asymmetrical distal edge in the Salmon Net collection than in "variant" collections, which is why

Salmon Net endscrapers are characterize as "mixed/other". It is apparent from this investigation that Salmon Net is a distinct Groswater assemblage, though it is undoubtedly related to both "typical" and "variant" Groswater assemblages.

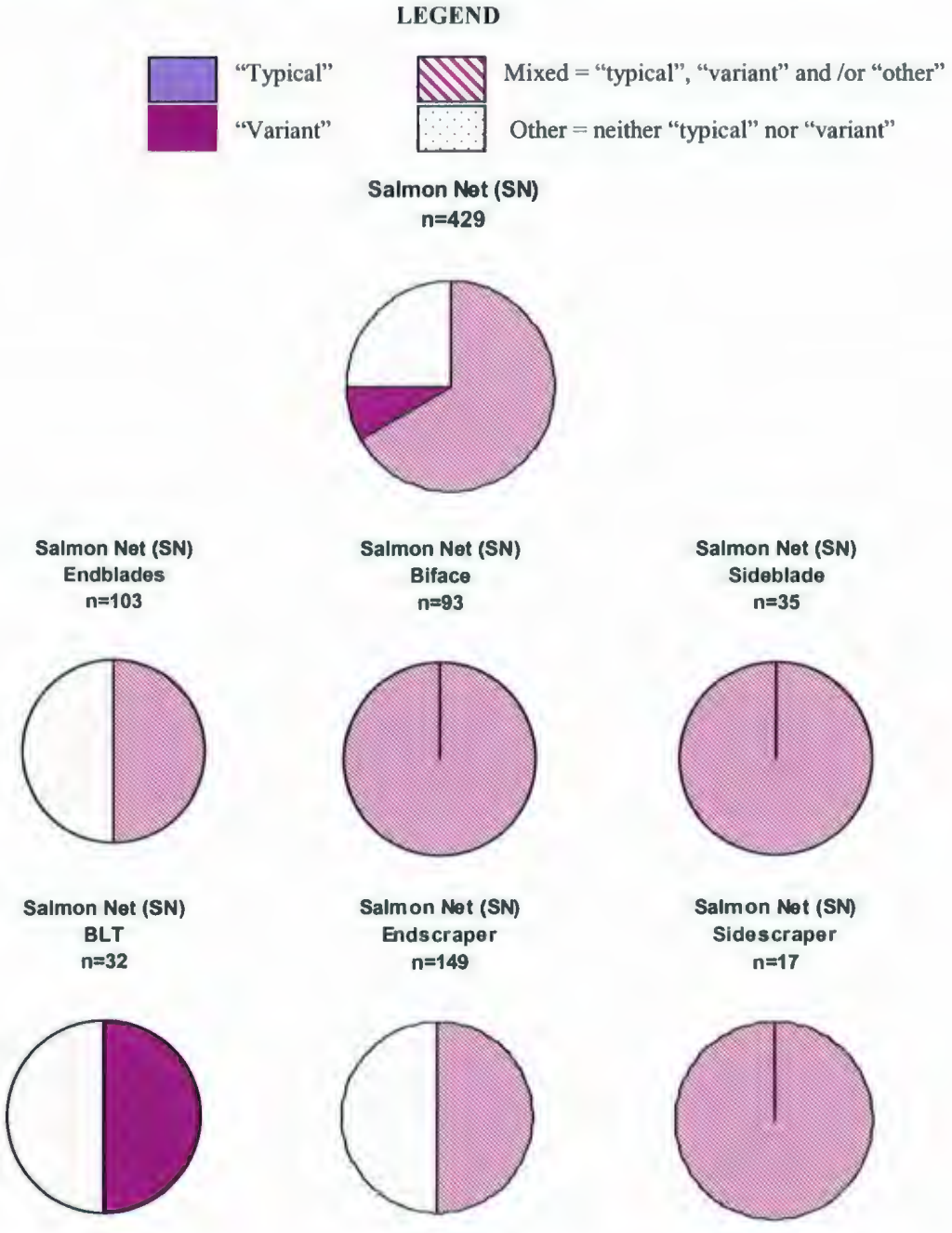

Figure 6.5: Salmon Net data compilation pie charts.

Peat Garden Data Compilation

Peat Garden is characterized as another "mixed" Groswater assemblage, even though most tool types are stylistically similar to "typical" tools, because there are also some stylistically "variant" specimens as well as some tools that are stylistically distinct from both "typical" and "variant" Groswater tools in the assemblage. It is important to consider that the Peat Garden assemblage is small in comparison to some of the other assemblages. Peat Garden endblades are characterized as "other" because most are "Salmon Net-type", which means they have shorter bases than both "typical" and "variant" endblades and their notch lengths are in between "typical" and "variant" notch lengths. There are two sideblades in the Peast Garden collection; one is stylistically "typical" and the other is stylistically "variant", which is why Peat Garden sideblades are characterized as stylistically "mixed". Peat Garden endscrapers are similar to "variant" endscrapers in terms of shape quantities; however there are proportionally more "cared" endscrapers and endscrapers with an asymmetrical distal edge in the Peat Garden collection than in "variant" collections, which is why Peat Garden endscrapers are characterize as "mixed/other". In general, the Peat Garden assemblage is "mixed", with primarily "typical" artifacts, a few "variant" artifacts and "Salmon Net-type" endblades.

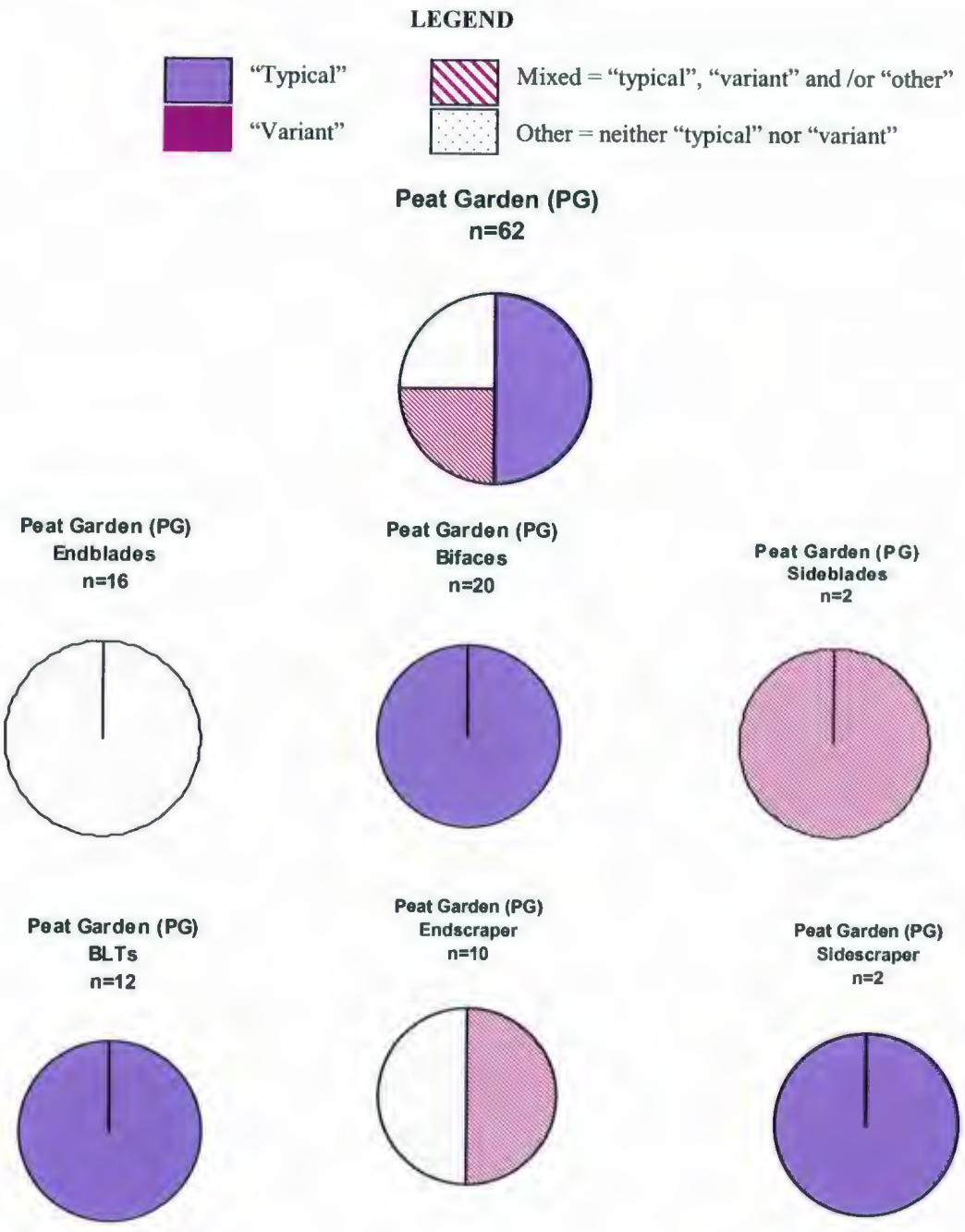

Figure 6.6: Peat Garden data compilation pie charts.

Cow Cove Data Compilation

Cow Cove is another "mixed" Groswater assemblage, though its general make-up is somewhat different from the Party Site, Salmon Net and Peat Garden. The Cow Cove assemblage includes a mix of "variant" and "other" Groswater artifacts. Like the Party Site, the Cow Cove assemblage is small in comparison to some of the other assemblages.

Cow Cove endblades are characterized as "other" because many are similar to "Salmon Net-type" endblades; their bases are shorter than "typical" and "variant" endblade bases, and most of their notch lengths measure in between "typical" and "variant" notch lengths. It is worth noting that a few Cow Cove endblades are unique from "typical", "variant" or "Salmon Net-type" endblades; they have short bases but their notch lengths are longer than "typical" notch lengths. Cow Cove bifaces are also characterized as "other" because their notch lengths are, in general, longer than most Groswater biface notch lengths. There are only two measurable sideblades in the Cow Cove collection; one is semi-lunar and the other is triangular. The fact that one is semi-lunar implies that it is stylistically "variant"; however the other attribute measurements are outside the variant range, so it is designated as "other".

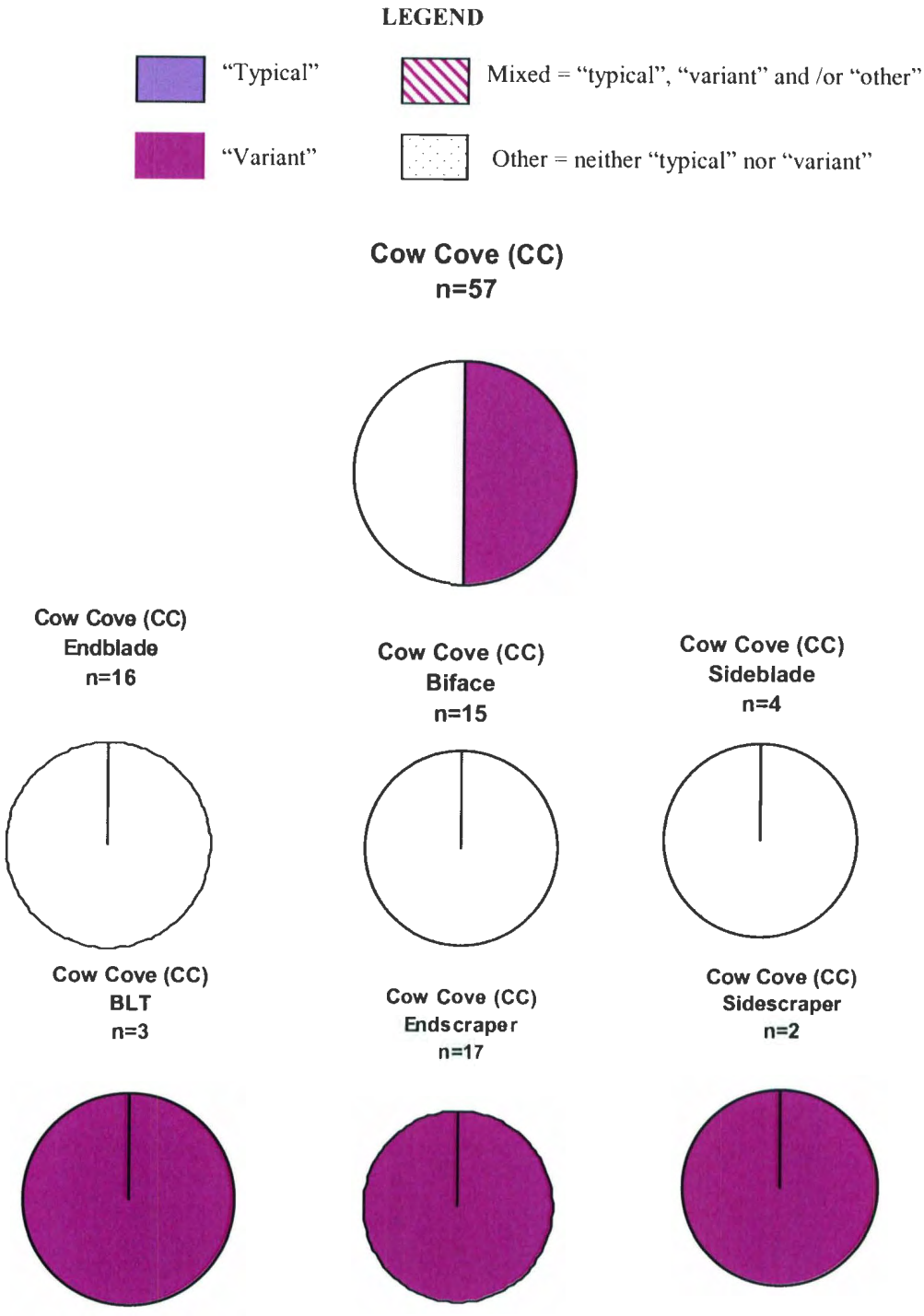

Figure 6.7: Cow Cove data compilation pie charts.

Cow Head Data Compilation

Most of the artifacts in the Cow Head assemblage are stylistically distinct from "typical" and "variant" Groswater artifacts, which means the assemblage is characterized as "other". There are also some "typical" and "variant" specimens in the collection; however they are in the minority. The Cow Head assemblage is another small assemblage. In fact, such a small assemblage likely accounts for why the Cow Head assemblage is composed primarily of stylistically "other" artifacts.

Cow Head endblades are similar to "Salmon Net-type" endblades because they have shorter bases than "typical" and "variant" endblades and because their notch lengths measure in between "typical" and "variant" notch lengths. Cow Head bifaces are unusual because their notch lengths are greater than most Groswater biface notch lengths. Cow Head endscrapers are similar to "variant" endscrapers in terms of shape quantities; however there is proportionally more "eared" endscrapers and endscrapers with an asymmetrical distal edge in the Cow Head collection than in "variant" collections, which is why Cow Head endscrapers are characterize as "mixed/other".

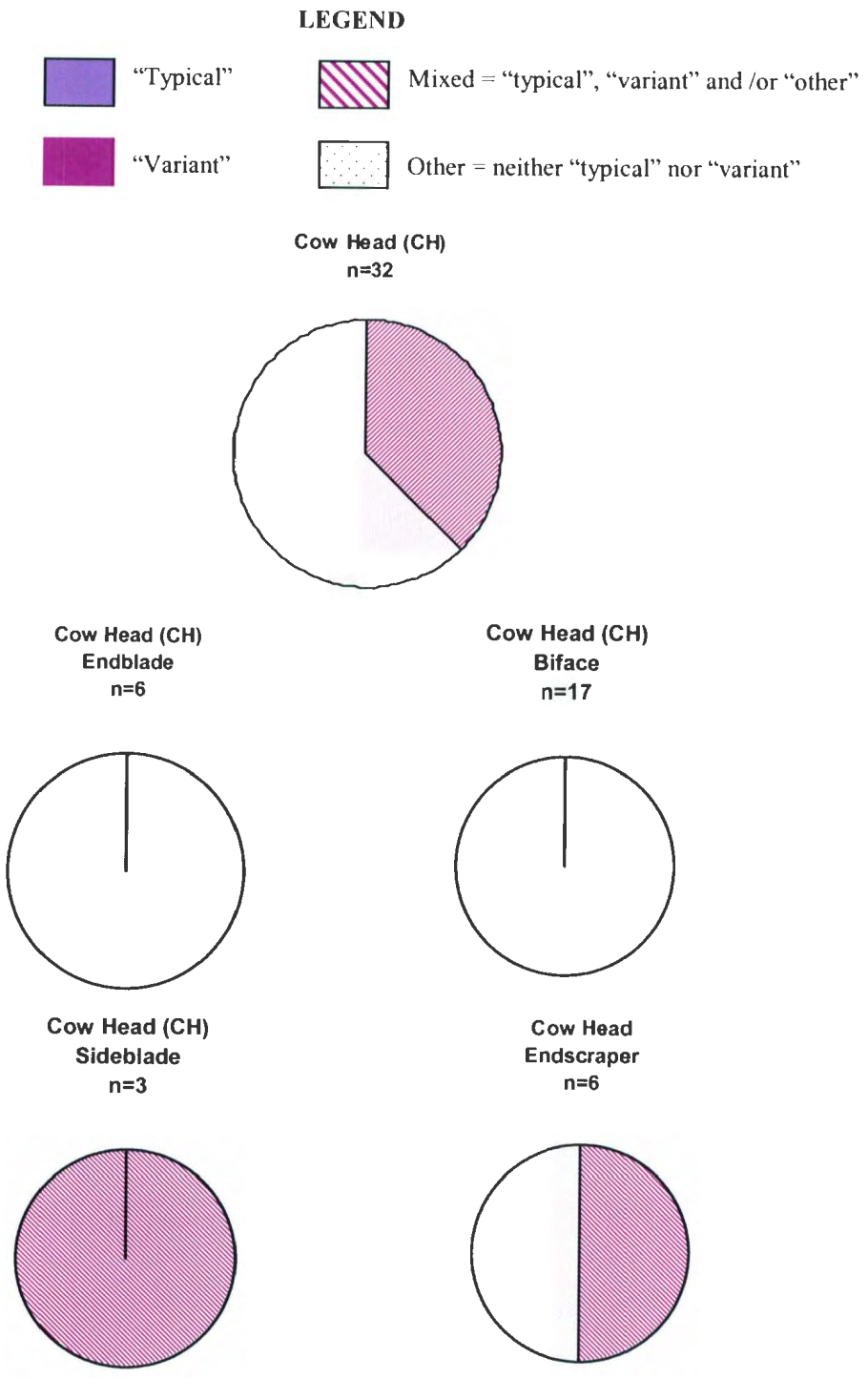

Figure 6.8: Cow Head data compilation pie charts.

Phillip's Garden West 1 Data Compilation

The Phillip's Garden West 1 assemblage is classified as "variant". This is expected since the definition of a "variant" Groswater assemblage is based on material from this assemblage as well as the later Phillip's Garden West 2 assemblage (below). Phillip's Garden West sets the standard for "variant" Groswater Palaeoeskimo material culture. In fact it is currently the only Groswater site that yields exclusively stylistically "variant" artifacts.

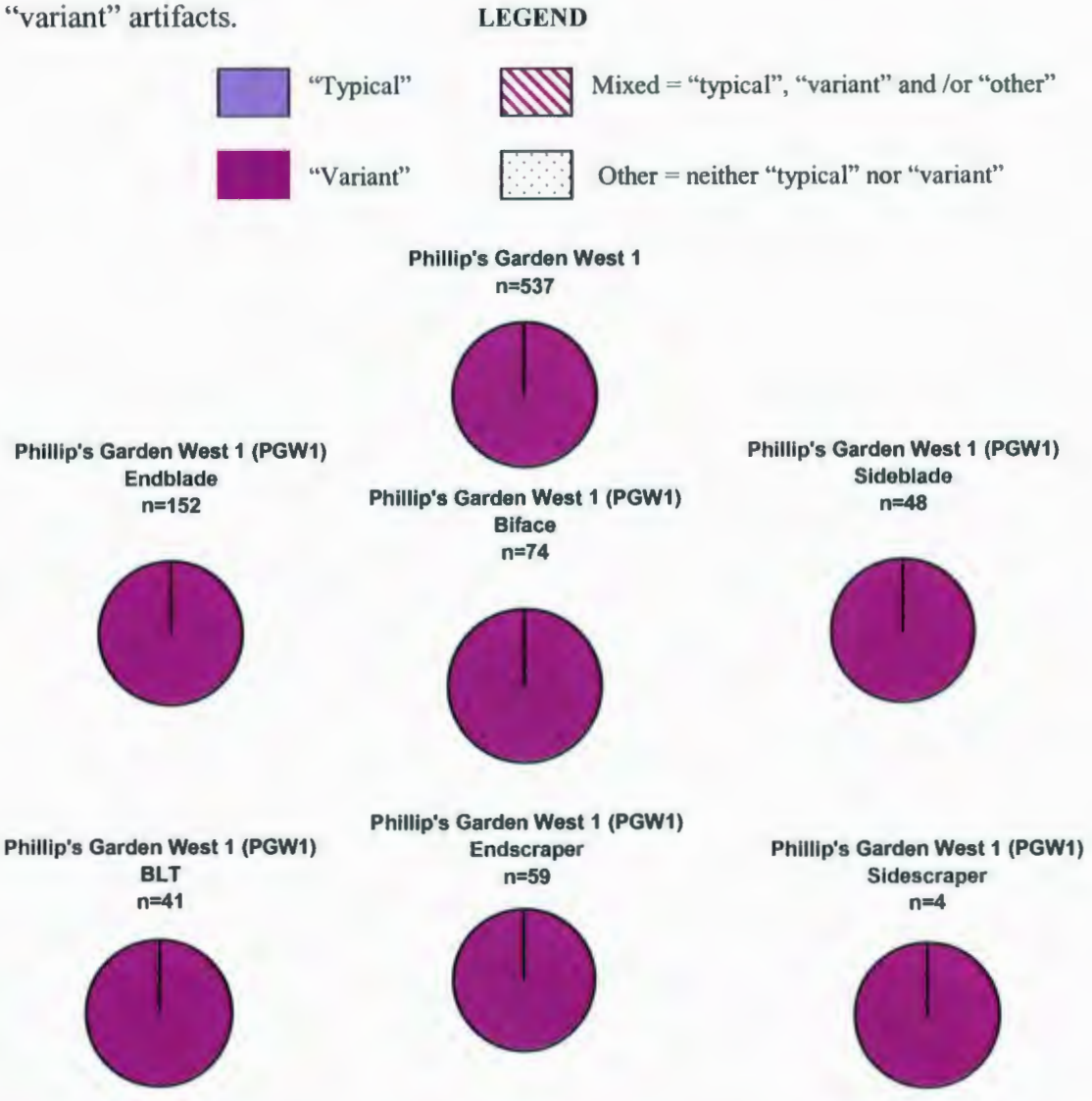

Figure 6.9: Phillip's Garden West 1 data compilation pie charts.

Phillip's Garden West 2 Data Compilation

As well, the Phillip's Garden West 2 assemblage is unsurprisingly classified as "variant".

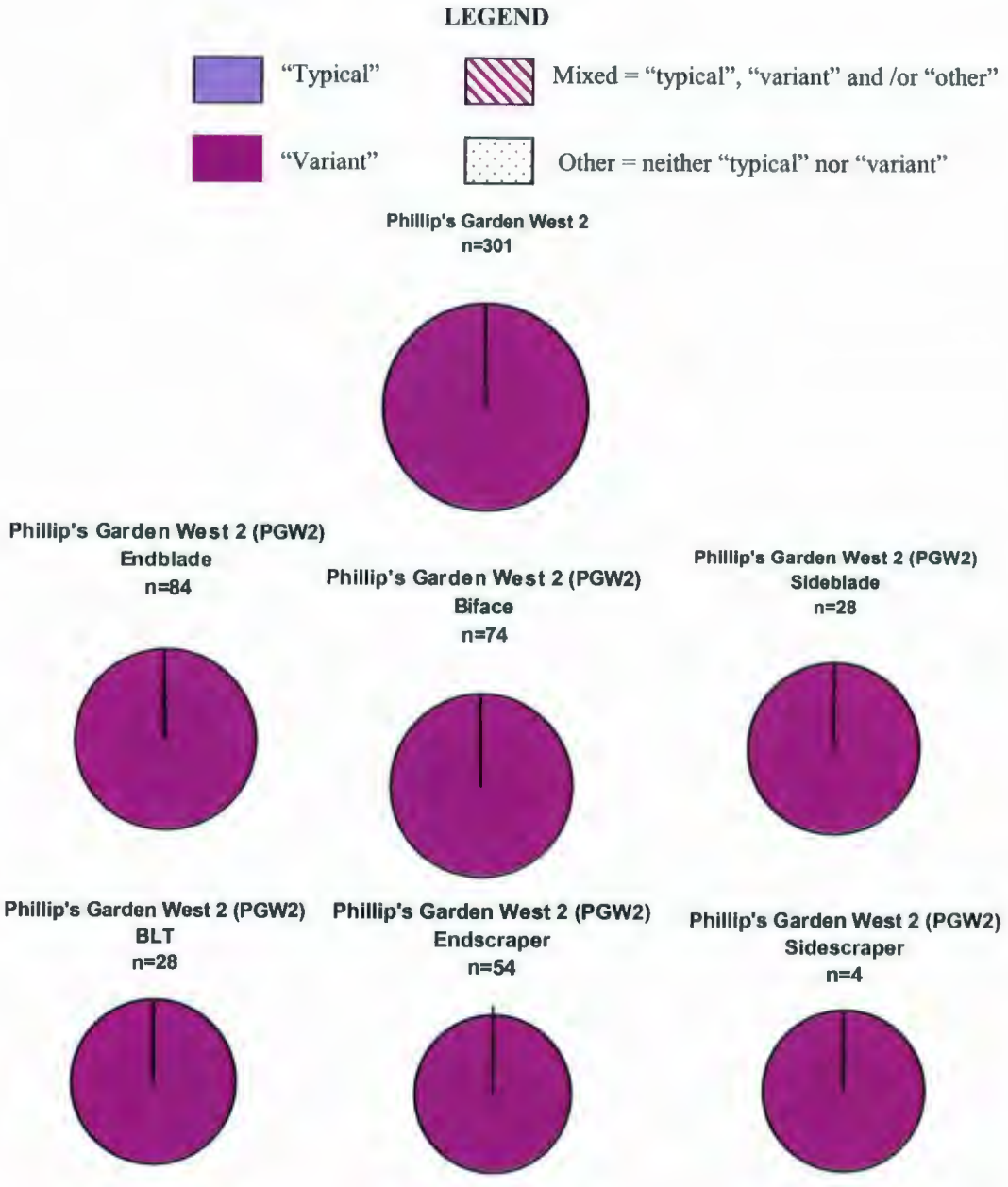

Figure 6.10: Phillip's Garden West 2 data compilation pie charts.

Discussion

This analysis demonstrates that a significant, perhaps even defining, feature of Groswater Palaeoeskimo lithic material culture is its stylistic variability. For this investigation ten Groswater artifact assemblages were examined at eight sites (Figure 6.11) in Newfoundland. Prior to this study, Renouf (2005) described Groswater Palaeoeskimo material culture stylistic variability as the difference between Phillip's Garden East ("typical") and Phillip's Garden West ("variant"). However, the preceding

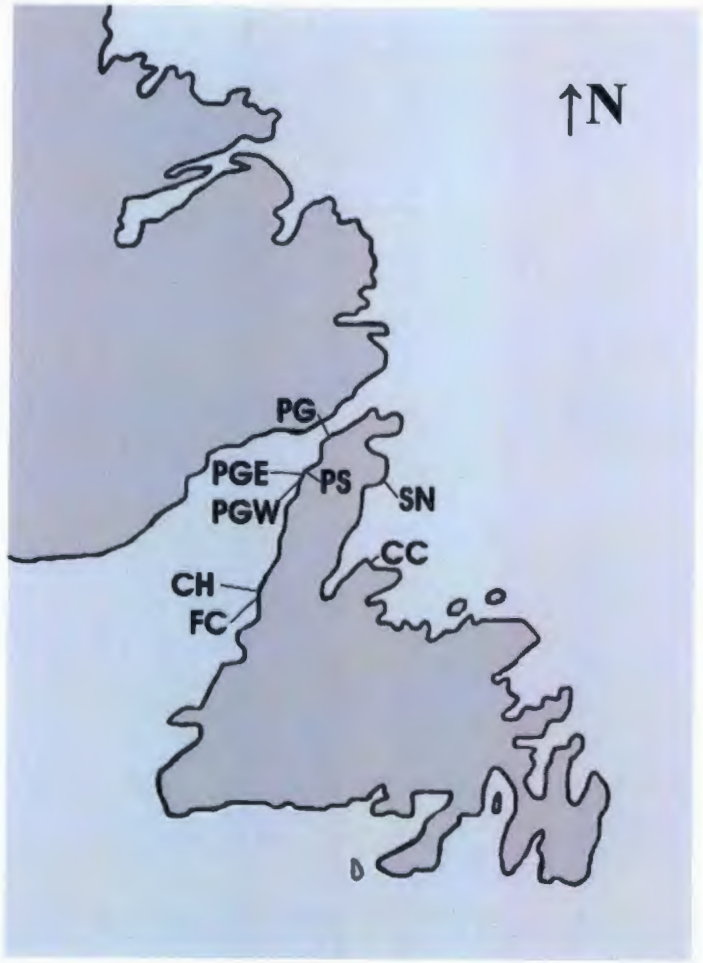

Figure 6.11: Location of Groswater Palaeoeskimo sites investigated.

Groswater Sites	PGE1	PGE2	FC	PS	SN	PG	CC	CH	PGW1	PGW2
Lithic Assemblage Stylistic Designation	T	T	MT	MT	M	MV	MV	OV	V	V
Occurrence of "Salmon Net-type" endblades			S	S	S	S	S	S		
Occurrence of "variant" artifacts			(V)	(V)	V	V	V	V	V	V
Occurrence of "typical" artifacts	T	T	T	T	T	T		(T)		
Occurrence of "other" artifacts			O	O	O	O	O	O		

Table 6.1: Groswater material culture stylistic variability summary.

analysis, which is summarized in Table 6.1, shows that Groswater lithic assemblages are more diverse than the dichotomy Renouf (2005) presented. Most Newfoundland Groswater lithic assemblages yield both stylistically "typical" and "variant" material culture. Furthermore, this study identifies a new stylistic category of Groswater endblades, termed here as "Salmon Net-type". Finally, this investigation also demonstrates that some Groswater artifacts are stylistically distinct from "typical" and "variant" artifacts and "Salmon Net-type" endblades. They are the artifacts referred to as "other". The artifact category "other" occurs primarily in small assemblages and likely reflects the type of anomalies that were masked in larger assemblages, as they would have occurred in the upper and lower quartiles of the data range. For this reason, this category of material is disregarded in the subsequent analysis and discussion.

The motivation for conducting this analysis of Groswater lithic material culture is to try and better understand an aspect of Groswater socio-economic variability. Accordingly, this discussion will attempt to explain how the results of this investigation (i.e. stylistic variability observed in the material record) affect our understanding of Groswater Palaeoeskimo society. To do this, one must first understand where style resides in material culture and the role style plays in social contexts. Archaeologists have not come to an agreement on either of these two style issues. With that being said, the various theoretical stances will be reviewed here and the position of archaeological thought taken in this paper will be clarified. Following the discussion of the use of style in archaeology, there will be a discussion of the possible significance(s) of stylistic variability, particularly in terms of how it relates to our understanding of Groswater society in Newfoundland.

'Style' has often been a debated subject in archaeology (Binford 1989; Conkey 1990; Conkey and Hastorf 1990; Dunnell 1978; Sackett 1977, 1982, 1986a, 1986b, 1990, 2003; Wiessner 1983, 1984, 1985). The reason style has been such a common topic for discussion is that it is often referred to and consistently used in archaeological analyses. Despite the continual presence of 'style', archaeologists cannot agree on its definition, use and usefulness in archaeology. As theoretical stances have changed and evolved, so too have archaeologists' perceptions of style (Conkey 1990; Conkey and Hastorf 1990). Since archaeology's origins and throughout the mid-late 1960s, stylistic similarities and differences in the material record were applied to the identification and organization of ethnic groups into a chronological framework (Conkey 1990; Conkey and Hastorf 1990).

Essentially, if a researcher thought a group of objects looked the same, they were identified as stylistically similar, and if a researcher thought a group of objects looked different then they were identified as stylistically distinct. Stylistically similar tools were thought to be the product of a distinct ethnic group and thus were classified as a 'type' (for example see Krieger 1944). Stylistically distinct material culture was identified as a different 'type' since it was thought to be associated with either a new but related or a totally different ethnic group. Different 'types' would be ordered into a chronological framework, according to the discretion of the archaeologist, thereby constructing culture-history (Conkey 1990; Conkey and Hastorf 1990).

When the theoretical framework of 'New Archaeology' was introduced in the mid-1960s, archaeologists' conceptions and use of style also began to change. Proponents of the 'New Archaeology' advocated a need to understand and explain cultures rather than just name and describe different ethnic groups (Binford 1962, 1965). According to Binford (1965), culture is an adaptive system, composed of subsystems, which people use to relate to their environment and to each other. People's behavior varies according to their natural or social environment. A person behaves differently depending on what sort of activity he was involved in (i.e. hunting or processing, etc.), when and where the activity took place (i.e. time of day, season, indoors or outside, etc.), or who was involved in the activity (i.e. women, men, elders, etc.). These types of situations create behavioral subsystems whereby people act a certain way and use a specific set of tools, thus potentially producing tool-set variability within a culture. The sum of peoples' actions, or subsystems, working together as a whole or as a system, is

referred to as their culture. Accordingly culture is both formulated and affected by the social and natural environment one grows up in. People act differently according to where and with whom they grow up, which is why there are different culture groups. These ideas affected the way archaeologists approached the issue of style in the material record because they realized it could reflect the dynamic inner workings of a cultural group (i.e. the subsystems) as well as the difference between cultural groups (Binford 1962). Consequently archaeologists began to look at how styles were related, as opposed to how they were the same or different. Essentially archaeologists believed that by investigating the relatedness of artifacts they might be able to better understand and explain the cultural system (Conkey 1990).

As archaeologists began to probe the relationship between the material record and culture, especially during the 1960s and 70s, the issue of style came into focus. Researchers realized they needed to be explicit about what style was, where it was located in material culture and what types of information could be gathered from it in order for it to be a reliable and useful resource for interpreting the past. Binford (1962, 1965, 1989) suggested that style is separate from function, it is potentially identifiable on any material culture and it can be used to access socio-cultural information. According to Binford (1962, 1965), people create material culture to help them respond to three types of situations: technical, social and ideological. Thus, material culture can be categorized into three functional categories: "technomic", "socio-technic", and "ideo-technic" (Binford 1962: 219). Style, according to Binford (1962, 1965, 1989), is any formal attribute that is not used to designate material culture into one or more of these functional

categories. Since style is separate from function, Binford (1962, 1965, 1989) suggests that its purpose is to express socio-cultural information; style "provide(s) a symbolically diverse yet pervasive artifactual environment promoting group solidarity and serving as a basis for group awareness and identity" (Binford 1962: 220). As a means of expressing socio-cultural information, style can be both traditional habitual behavior and purposeful expression (Binford 1962, 1965, 1989). By defining the difference between function and style, Binford provided archaeologists with the means by which they could potentially access social and ideological information in the past, which was important if archaeologists were to achieve cultural explanation as opposed to cultural description. However, not everyone agreed with Binford's (1962, 1965, 1989) characterization of style.

Sackett (1977, 1982, 1986a, 1986b, 1990) is one of Binford's most ardent opponents, challenging him with an alternative theory of style. Sackett (1982, 1986a, 1986b, 1990) argues for an isochrestic approach to style. He suggests that style cannot be separated from the function of an object as neatly as Binford (1962, 1965, 1989) suggests (Sackett 1977, 1982, 1986a, 1986b, 1990). This is particularly apparent with regard to lithic variation. As Sackett (1982) points out, stone tools are not likely to exhibit the sort of residual style or decoration that is apparent on some ceramics for instance. However, stone tools certainly vary in the way they look. Since stone tools tend to vary formally, as opposed to exhibiting residual style or decoration, lithic variation has typically been associated with distinct ethnic groups (e.g. Bordes 1973). However, there is no reason why a distinct cultural group cannot, for example, themselves create formal variation in

response to different activities (e.g. Binford 1973; Sackett 1982: 63). Because of this, Sackett argues that style and function are complementarily exhibited in formal variation (Sackett 1982). Sackett (1977, 1982, 1986a, 1986b, 1990) believes there are limitless choices in terms of creating material objects, both in terms of the raw material one uses to make them, the way one makes them and what, in the end, one decides to make. Consequently, style exists in the choices people make at every stage in the production process. Style cannot be separated from tool function because stylistic choices are involved in creating the functional tool form. Sackett (1986b) emphasizes that his isochrestic theory refers to "where style resides" (1986b: 275) and not what information can be interpreted from style. Though, he does offer an opinion with regard to this other matter (Sackett 1985, 1986b).

Binford and Sackett's divergent opinions encompass the debate over what style is and where it resides. Binford (1962, 1965, 1989) argues that style and function are separate and that style represents residual, formal attributes once functional attributes have been determined. Sackett (1977, 1982, 1986a, 1986b, 1990, 2003), on the other hand, argues that style and function complement each other in the formation process; style can be functional and/or function has style. This style versus function debate persists in archaeology and is significant since it affects how archaeologists approach and interpret style (Brantingham 2007; Dunnell 1978; Neiman 1995; Odess 1998; Sackett 2003; Shennan and Wilkinson 2001). Therefore, prior to discussing the question of what information can be interpreted from style, it is important to note the stance taken in this paper with regard to the definition of style. Some of the ideas expressed by both Binford

and Sackett have been drawn upon to develop a definition and understanding of style that is useful to this analysis.

One stance taken in this investigation is that style and function are complementary, or at least that at times they cannot be distinguished (Sackett 1982, 2003; Shennan and Wilkinson 2001; Wiessner 1983). Researchers that continue to argue for a distinction between style and function have begun to develop models that might enable them to make the distinction (Brantingham 2007; Neiman 1995). However these models deal with ceramics (Brantingham 2007; Neiman 1995) and it is unclear how they can be applied to lithic technology, where attributes like serration, grinding or base height that might be used for both functional and/or social purposes.

It is also suggested that style exists both in the production process as well as in the final product, whether it is in the form of residual attributes/decoration or the actual form of the object (Binford 1962, 1965, 1989; Sackett 1977, 1982, 1986a, 1986b, 1990, 2003). Style exhibited in the production process (i.e. in the choice a person makes with regard to raw material) how he or she makes the object and finally what the object ends up looking like is significant for distinguishing ethnic groups (Lemonnier 1992; Bleed 2001), while style exhibited in the final product is significant for understanding the social dynamics of a particular culture (Binford 1962, 1965, 1989; Hodder 1982; Wiessner 1983, 1984). It is this second form of style that is of particular interest in this investigation; however the first type of style must also be taken into consideration.

According to the theoretical concept of *chaîne opératoire* (Lemonnier 1992; Bleed 2001), when people make similar choices in the production process, it indicates a

shared cultural heritage. Therefore analyses of production processes enable archaeologists to discern different ethnic groups. When the production processes of the assemblages in this investigation were compared and analyzed, a common cultural affiliation among them was apparent for two reasons. First, Groswater lithic tools are typically made on flakes rather than by the method of bifacial core reduction. Secondly, Groswater Palaeoeskimos produced a unique lithic toolkit (in comparison to other Arctic Small Tool traditions), which typically included box-based, side-notched endblades, a variety of thin, often asymmetrical, corner notched bifaces, chipped and ground burin-like tools, circular, ovate and triangular sideblades, rectangular 'eared' and triangular scrapers, concave sidescrapers, and microblades (Leblanc 1996; Renouf 1994, 2005; Tuck 1987). Many of these tool types have attributes in common, even if the size, shape and frequency of the attributes vary. For example, "typical", "variant" and "Salmon Net-type" endblades all have notches and a box base; however, the size of the notches and the height of the base vary. Since similar stylistic choices are exhibited in the production processes of all the assemblages considered here, this occurrence of style is not considered for further analysis.

The focus of this investigation is to analyze the incidence of stylistic variability apparent in the outward appearance of objects. The fact that this investigation provides convincing evidence that stylistic variability apparent in the outward appearance of objects not only exists, but is prevalent in Groswater assemblages, suggests that it is an important consideration for our understanding of Groswater society. There are three potential explanations for why tool type stylistic variability occurs at and between

Groswater assemblages. First, Groswater material culture variability could be socio-culturally relevant, "transmit[ing] information about personal and social identity" (Wiessner 1983: 256) and social relationships (Dietler and Herbich 1998; Hodder 1982). Second, Groswater material culture variability could be functional, reflecting 'selection' in response to different patterns of subsistence and seasonality (Dunnell 1978, Brantingham 2007). A third possible explanation for change is that it is chronological, reflecting stylistic change over time. Socio-cultural and functional explanations for stylistic variability may have occurred throughout Groswater history or they may be examples of innovative change over time. There is also a possibility of natural, evolutionary change or 'drift' over time (Neiman 1995). Archaeologists often emphasize or focus on one of these explanations over another, depending on their interests and notions of style. However, the stance taken here is that all three explanations must be considered, particularly when attempting to explain lithic variation, since the line between function and style may be particularly ambivalent with regard to lithics (Sackett 1982). Furthermore it is also suggested that these explanations are not mutually exclusive.

A Socio-Cultural Explanation

Stylistic variability may be caused by or result from "personal and social identification through comparison" (Wiessner 1984: 191) or in situations of power negotiation (Hodder 1982). In other words, style may consciously or unconsciously be used to establish group identity or position or one's personal identity or position within a group. Because of this, archaeologists can potentially use style to discern social

information such as: the existence of separate Groswater bands or regional groups in Newfoundland, with each group producing slightly different styles of Groswater material culture; the rate of interaction between different groups; and/or the dynamics of and between personal and social relationships over time (e.g. Wiessner 1984; 1985).

Ethnoarchaeologists have shown that closely related groups or people with a shared cultural heritage might produce stylistically distinct material culture (Dietler and Herbich 1998, Wiessner 1983, 1984, 1985). For example, Dietler and Herbich (1998) investigated pottery production among the Luo people of Western Kenya. This culturally and linguistically distinctive group, which includes around two million people, is spread out into dozens of "subtribes" (i.e. what I refer to as separate bands or regional groups) around the Winam Gulf of Lake Victoria. Some of the Luo subtribes produce stylistically distinct pottery types, which are widely distributed and thus present amongst all or most of the subtribes. This pattern demonstrates both regionalism and communication. This may stand as one model for stylistic variability of Groswater material culture in Newfoundland. For example, Groswater lithic material culture is stylistically mixed at six of the eight investigated Groswater sites in the northwest region of Newfoundland (Figure 6.12). Therefore, it is possible that like the Luo, there existed Groswater subgroups who were distinct enough to produce different styles of material culture but who communicated enough that the different styles are present in all or most sites.

Figure 6.12: Material culture stylistic variation at each Groswater site investigated.

Wiessner (1984, 1985) provides another ethnoarchaeological example of stylistic variability among people with a shared cultural heritage, which can stand as a second model for stylistic variability of Groswater material culture in Newfoundland. Wiessner (1983, 1984, 1985) investigated style apparent on various objects used and produced by the Kalahari San in order to better understand the behavioral basis behind its production. One line of research that is of particular interest to this investigation is her research on Kalahari San projectile points (Wiessner 1984). Wiessner found that Kalahari San

projectile points varied stylistically in connection with individuals and linguistic groups. To test whether stylistic variability existed at the level of the individual among the Kalahari San, she studied projectiles made by five !Kung from different bands in the band cluster /Xai/Xai, which is located at the border of Namibia and Botswana. In her observations, Wiessner (1984) noted that some craftsmen were more skilled than others; she noted that each hunter produced a stylistically distinctive set of arrows with attributes of varying sizes and shapes, and she observed that a hunter's style changed over time. Even though hunters produced stylistically distinctive arrows, they were not so different as to be unrecognizably !Kung. Some hunters varied their style to amuse their exchange partner, while others were proud of maintaining a consistent style (Wiessner 1984, 1985). Thus, according to these observations, stylistically mixed material culture found at six of the eight investigated Groswater sites in the northwest region of Newfoundland (Figure 6.12) may also be a reflection of varying skill level or conscious or unconscious individual preferences.

Either explanation seems possible, given that many Groswater sites demonstrate stylistic variability, having elements of "typical", "variant" and "Salmon Net-type" endblades; however neither explanation is supported by data from Phillip's Garden East and Phillip's Garden West. Phillip's Garden East and Phillip's Garden West are located adjacent to one another and twenty-two radiocarbon dates demonstrate considerable chronological overlap; however, Phillip's Garden East contains predominantly "typical" material whereas Phillip's Garden West contains predominantly "variant" material (Renouf 2005). Thus, if there were separate bands or individuals producing and

exchanging stylistically distinct material culture in Newfoundland, it does not appear they did so in Port au Choix where they were adjacent and contemporaneous. Consequently, given the scenarios described above, it remains unclear whether or how material culture variation can be explained by socio-cultural factors.

A Functional Explanation

Stylistic variability of Groswater material culture may be related to natural selection or adaptation (Brantingham 2005; Dunnell 1978). In other words, people may adjust tool style to better suit their subsistence needs. For example, "typical", "Salmon Net-type" or "variant" endblades might have been function-specific with regard to what type of animal was hunted or when. Seasonal conditions or animal size might have required different sized and shaped harpoons and harpoon heads, which would have required different endblades. Or hunting tools may have varied depending on whether the hunt was inland, onshore or in the water. Processing tools like endscrapers or sidescrapers might have also varied stylistically depending on what type of animal was processed. As well, other tool types might have varied stylistically depending on camp location, resources availability, seasonality and site activities.

A comparison of the relative quantities of functional tool types in the Phillip's Garden East and Phillip's Garden West assemblages (Table and Figure 4.13), site seasonality (Table 4.12) and faunal data (Wells 2002) disproves the hypothesis that differences in subsistence functions account for the difference between "typical" and "variant" tools. If the difference between "typical" and "variant" Groswater tools was functional, one would expect that the relative amounts of functional tool types, site

seasonality and faunal material amongst sites would be different. However, according to Table 4.13 and Figure 4.13, most Groswater assemblages, including Phillip's Garden East and Phillip's Garden West, yield similar relative amounts of functional tool types. In descending rank order assemblages generally include primarily bifaces, followed by endblades and endscrapers and much fewer sideblades, burin-like tools and sidesrcapers. Furthermore, faunal data from both Phillip's Garden East and Phillip's Garden West demonstrates that both sites were early spring seal hunting locales (Wells 2002). Since Phillip's Garden East and Phillip's Garden West were occupied at the same type of year, are located right next to each other and yield similar artifact and faunal collections, it appears as though they had similar subsistence functions. Therefore the difference between "typical" and "variant" tools does not appear to be functional.

Although function does not explain the difference between "typical" and "variant" tools it might explain the occurrence of "Salmon Net-type" endblades along with or in place of "typical" or "variant" endblades. To demonstrate this, it is necessary to refer to Leblanc's (1996; 2000) Groswater research, discussed in Chapter 2. Leblanc (1996; 2000) determined that Groswater people practiced both a logistical and/or opportunistic foraging strategy, depending on the predictability of available resources. In Groswater site assemblages she found evidence of opportunistic foraging on the Quebec side of the Gulf of St. Lawrence, logistical foraging in Port au Choix, and both opportunistic and logistical foraging in Cow Head. Leblanc suggested that Groswater people practiced opportunistic foraging in the Lower Quebec Shore because resource acquisition was unpredictable. People did not know when or where they could find seals or other animal

resources and therefore they were always ready to hunt and to seize every opportunity. Leblanc conjectured that people practiced logistical foraging in Port au Choix where there is a short but reliable and predictable seal hunt. Leblanc found evidence for both logistical and opportunistic foraging at Cow Head where there are predictable chert sources but where the seal hunt was not predictable like at Port au Choix. She suggested people practiced a logistical foraging strategy with regard to the chert resource and an opportunistic strategy with regard to animal resource acquisition.

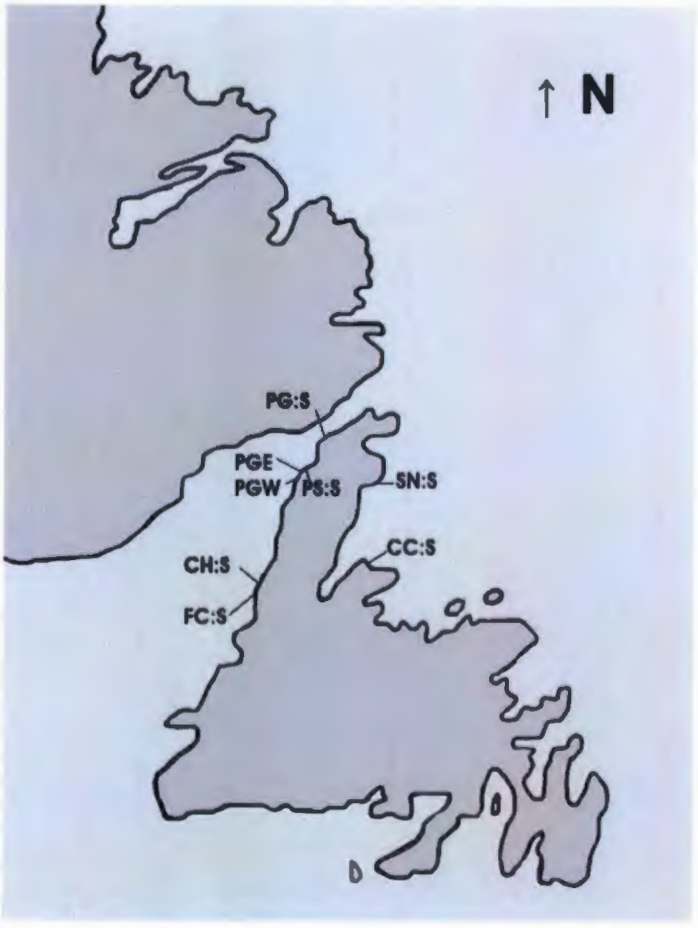

Figure 6.13: Groswater sites with an occurrence of "Salmon Net-type" endblades (S).

If Leblanc's findings are applied to the occurrence of "Salmon Net-type" endblades in Newfoundland, an interesting pattern emerges. "Salmon-Net type" endblades show up in every Groswater assemblage except Phillip's Garden East and Phillip's Garden West (Figure 6.13). A possible reason for this could be that "Salmon Net-type" endblades with their small base were a more universal, multi-functional tool. According to this line of reasoning, "Salmon Net-type" endblades were used in opportunistic foraging situations, when a person did not know when or what type of animal would be encountered. "Typical" and "variant" endblades, which have a larger box base, are associated with logistical and particularly seal hunting situations. Thus Phillip's Garden East and Phillip's Garden West which are characterized as logistical seal hunting sites (Leblanc 1996, 2000; Wells 2002) have only "typical" and "variant" endblades.

A Chronological Explanation

Groswater material culture may have started out as stylistically "typical" and changed over time to stylistically "variant". This sort of change over time can be due to innovation, i.e. socio-cultural or functional cause(s), or 'drift' (Neiman 1995; Shennan and Wilkinson 2001). 'Drift' is essentially transmission error, either teaching or learning how to make a tool incorrectly (Neiman 1995; Shennan and Wilkinson 2001). My analysis of Table 6.11 suggests that a chronological evolution may explain the difference between stylistically "typical" and "variant" tools because many of the earliest dates are associated with "typical" material culture, many of the middle dates are associated with

"mixed" assemblages and many of the later dates are associated with "variant' material culture.

To assess this proposition I divided Newfoundland Groswater chronology into three time periods: early, middle and late and compared each assemblage's stylistic designation(s) with its chronological designation(s). My hypothesis is that "typical" assemblages correspond to the early time period, "mixed" assemblages correspond to the middle period representing a transitional stage, and "variant" assemblages correspond with the late period. The known range of Groswater occupation in Newfoundland is 2885-1735 BP. When that range is divided evenly into three, early Groswater occupation is established as 2885-2445 BP, the middle period is between 2444-2090 BP and the late period is between 2089-1735 BP. In Table 6.11, the early period is highlighted in yellow, the middle period in blue and the late period in pink. In general, the trend supports the hypothesis; yellow corresponds with assemblages that yield primarily "typical" Groswater assemblages, blue corresponds with "mixed" assemblages and pink corresponds with primarily "variant" assemblages. It is worth highlighting Salmon Net since it is associated with the middle phase of Groswater occupation in Newfoundland and it is the largest "mixed" site, with numerous "typical" and "variant" tool specimens. On this basis, Salmon Net represents a Groswater assemblage during the transition from "typical" to "variant" material culture.

Some inconsistencies with the trend are Cow Head and to some degree Phillip's Garden East and Phillip's Garden West. The Cow Head assemblage is stylistically "mixed", yet it is associated with early and late dates, rather than middle dates. This may

be explained by the fact that it is a workshop site located at Cow Head, the principal chert source for Palaeoeskimo groups in the region, and it was likely re-visited over time. The rest of the Groswater sites considered in this investigation are hunting sites. With regard to Phillip's Garden East and Phillip's Garden West, one might expect that since they yield exclusively "typical" and "variant" material culture, respectively, their associated dates would not overlap. In other words, according to this hypothesis, since Phillip's Garden East is an exclusively "typical" site, one would expect it to be associated with only early dates and since Phillip's Garden West is exclusively "variant", one would expect it to be associated with only late dates. However, Phillip's Garden East is associated with both early and middle dates and Phillip's Garden West is associated with early, middle and late dates. Thus, according to the hypothesis each site should also yield partially "mixed" assemblages, but they do not. This inconsistency may be explained by the fact that Renouf (2005) suggests that Phillip's Garden West is an unusual, hunting ritual site. Therefore it does not necessarily correspond with the normal behavioral trend. In conclusion, as the data currently stand, the hypothesis that Groswater material culture changed over time is partially supported.

Groswater Sites	Lithic Assemblage Stylistic Designation	Chronology
PGE1	T	2760+/-90 2660+/-70 2510+/-90 2370 +/- 160 2320 +/-100 (1930+/-140)[1] (1910+/-150) (1730+/-200)

[1] Researcher thinks these three recent dates are associated with the Dorset occupation of Phillip's Garden.

PGE2	T	2500+/-60 2420+/-110 2350+/-100 2350+/-90 2310+/-90 2260+/-70 2240+/-100
FC	MT	2700 +/-140 2530 +/-280 2270 +/- 100 2100 +/-60
PS	MT	2710+/-40 2570+/-60 2460+/-70
SN	M	(1570+/-70) 2420+/-50 2200+/-50 (3710+/-60)[2]
PG	MV	2210+/-40 2120+/-40 2050+/-70 1938+/-65 1735+/-45
CC	MV	None
CH	OV	2885+/-120 2805+/-130 2480+/-110 2010+/-80
PGW1	V	2540+/-60 2460+/-120 2340+/-100 2340+/-70 2240+/-70 1960+/-80
PGW2	V	2350+/-80 2200+/-110 2190+/-100 2090+/-70

Table 6.2: Chronology of investigated Groswater sites.

According to the data presented above, Groswater material culture changed from stylistically "typical" to stylistically "variant" over time, though there is still not an explanation for why the change occurred. Groswater material culture may have changed

[2] Excavator thinks the early and late dates are pre- and post-occupation.

from "typical" to "variant" because of individual preference, because of group differentiation, for functional reasons or because of 'drift'. There is, however, a likely explanation for the occurrence of "Salmon Net-type" endblades instead of or in conjunction with "typical" and "variant" types. "Salmon Net-type" endblades may have had a functional purpose. These ideas as well as some of the other main points from this study are summarized in the following chapter.

Chapter 7

Conclusion

The Salmon Net excavation produced a Groswater lithic assemblage that included a mix of stylistically "typical" and "variant" material culture as well as a unique "Salmon Net-type" of endblade. These results introduced the possibility that Groswater lithic assemblages could be stylistically mixed and/or more variable than researchers previously proposed. Ten Groswater assemblages from Newfoundland were analyzed to determine whether a stylistically "mixed" assemblage like Salmon Net, or stylistically uniform assemblages like Phillip's Garden East or Phillip's Garden West (Renouf 2005), is characteristic of Newfoundland Groswater assemblages. The conclusion is that material culture diversity is a defining feature of Newfoundland Groswater assemblages. Consequently, material culture stylistic variability must factor into our understanding of Groswater society. The purpose of this chapter is to recap some of the main points from this study that led to this conclusion.

Chapter 2 provided a description of some of the archaeological investigations that have affected our understanding of Groswater society over the last 35 years. It focused on two research projects in particular since they are pertinent to this investigation. Leblanc (1996) and Renouf (2005) demonstrated instances of Groswater behavioral diversity in the archeological record; in other words, they demonstrated that Groswater people did not act uniformly over time and place. Their findings encouraged an investigation of Salmon Net lithic artifacts to explore whether people behaved differently

in this previously unknown region with regard to Groswater occupation of Newfoundland.

The Salmon Net site and excavation, described in Chapter 3, provided the impetus for this investigation. There were a number of significant discoveries during the excavation, including structural features, a large amount of fire-cracked rock and radiocarbon samples. However the most significant discovery, which is the basis of this investigation, was stylistic variation in the lithic assemblage. The Salmon Net assemblage appeared to include both stylistically "typical" and "variant" material culture, as well as a stylistically distinct "Salmon Net-type" endblade. Consequently this study ensued, to investigate whether or not a stylistically "mixed" assemblage like that found at Salmon Net was common in Newfoundland Groswater contexts.

The Salmon Net assemblage was compared to nine Groswater assemblages. These were: Phillip's Garden East 1 and Phillip's Garden East 2, which were an older and younger component of the same site; Phillip's Garden West 1 and Phillip's Garden West 2, which were again and older and younger component of the same site; Factory Cove; Party Site; Peat Garden; Cow Cove; and Cow Head. These sites were each described in Chapter 4.

Quantitative and/or qualitative attributes from six tool categories were compared in Chapter 5 to evaluate stylistic similarities and differences of those six tool types among the various assemblages. Tool attributes from each of the Groswater assemblages were compared against "typical" and "variant" tool attributes to determine whether tools were stylistically similar to "typical", "variant", both or neither types of tools. A group of

endblades from the Salmon Net collection stood out in comparison to "typical" and "variant" endblades because they had a shorter base and notch lengths that measured in between "typical" and "variant" notch lengths. This stylistically distinct endblade form, called "Salmon Net-type", was also identified in a number of other Newfoundland Groswater assemblages. The results of the Chapter 5 tool-type analysis were combined in Chapter 6 to determine the various assemblages' stylistic trends; in other words to determine whether an assemblage could be characterized as "typical", "variant" or "mixed". The results from each site are summarized in turn.

The Phillip's Garden East and Phillip's Garden West assemblages were used as archetypical "typical" and "variant" assemblages, respectively, for comparative purposes in this investigation following Renouf (2005).

The Factory Cove assemblage is primarily composed of stylistically "typical" tools; however about half of the endblades were characterized as "Salmon Net-type".

The majority of tools in the Party Site assemblage are stylistically "typical", and the rest are neither stylistically "typical" nor "variant". The assemblage was therefore identified as stylistically "mixed". There are some "Salmon Net-type" endblades in the assemblage.

My hypothesis that the Salmon Net assemblage is a stylistically "mixed" assemblage was validated in this investigation. The assemblage includes a mix of both stylistically "typical" and "variant" tools. Furthermore, most of the endblades in the assemblage were identified as "Salmon Net-type".

The Peat Garden assemblage was identified as another "mixed" assemblage. Both "typical" and "variant" artifacts are found in the assemblage. Furthermore, "Salmon Net-type" endblades dominate the endblade collection.

The Cow Cove assemblage is another "mixed" assemblage; it includes a mix of "variant" and "other" tools. Cow Cove endblades are identified as "Salmon Net-type". The Cow Head assemblage is identified as "other" because most of the tools are stylistically distinct from both "typical" and "variant" forms. There are two possible reasons for this: (1) most of the tools are distinct because the Cow Head site had a different function from most of the other sites considered here, i.e. Cow Head was a workshop site, as opposed to the other Groswater sites, which were hunting sites; (2) the fact that Cow Head was such a small assemblage could have skewed the results.

From the results of the comparative analysis performed in this investigation we can conclude that stylistic diversity of Groswater material culture is a significant aspect of that culture. Therefore, a consideration of why it occurred should give us a better understanding of Groswater social and economic goals and behavior. There is an ongoing debate among archaeologists over the issue of style, what it is and how it should be interpreted (Binford 1989; Conkey 1990; Conkey and Hastorf 1990; Dunnell 1978; Sackett 1977, 1982, 1986a, 1986b, 1990, 2003; Wiessner 1983, 1984, 1985). This debate and the stance taken in this paper are discussed in Chapter 6. To summarize, in this study 'stylistic variability' means variation in the measurable (i.e. quantitative) and non-measurable (i.e. qualitative) attributes of an artifact and, following from the analysis of individual artifacts, of an assemblage of artifacts. Three possible explanations for

Groswater material culture stylistic variability were discussed in Chapter 6 and they will each be reviewed in turn.

Groswater material culture variability in Newfoundland may be the result of socio-cultural dynamics. In other words, style may have consciously or unconsciously been used to establish group identity or position or one's personal identity or position within a group. Material culture stylistic variability could, for example, reflect that there were separate bands or regional groups of Groswater people on the island of Newfoundland who were distinct enough to produce different styles of material culture, such as "typical", "variant" and "Salmon Net-type" tools. Communication and exchange between the various subgroups could account for why Groswater sites like Factory Cove, Party Site, Salmon Net, Peat Garden, Cow Head and Cow Cove yield stylistically "mixed" Groswater assemblages. Alternatively, Groswater material culture stylistic variability could be a reflection of varying skill levels or conscious or unconscious individual preferences. Unfortunately these explanations are not supported by data from Phillip's Garden East and Phillip's Garden West. Phillip's Garden East and Phillip's Garden West are located next to each other and there is chronological overlap in their occupation, yet Phillip's Garden East yields exclusively "typical" material culture and Phillip's Garden West yields exclusively "variant" material culture. If there were separate bands or individuals producing and exchanging stylistically distinct material culture in other parts of Newfoundland it is unlikely that they would not have done so at Port au Choix when they were living side-by-side. Consequently, it remains unclear whether or how material culture variation can be explained by socio-cultural factors.

Another possible explanation for Groswater material culture stylistic variability is that it was functional. The difference between "typical" and "variant" Groswater tools could reflect different patterns of subsistence and seasonality. In other words, "typical" material culture could have been used to hunt certain animals and "variant" material culture could have been used to hunt different animals. Or, "typical" material culture was used during certain times of the year, and "variant" material culture was used during other times of the year. However, the data presented by Phillip's Garden East and Phillip's Garden West contradict this possible explanation. According to Wells (2002), both Phillip's Garden East and Phillip's Garden West were occupied during late summer/early spring for the seal hunt. If function did account for the difference between "typical" and "variant" material culture one would expect Phillip's Garden East and Phillip's Garden West to yield stylistically similar material culture, since they were both used at the same time for the same purpose. Yet Phillip's Garden East and Phillip's Garden West yield stylistically distinct "typical" and "variant" assemblages, respectively.

Although function does not explain the difference between "typical" and "variant" tools, it is hypothesized that "Salmon Net-type" endblades served a functional purpose; they were used in opportunistic hunting situations. In other words, their size and shape made them a more universal tool that could be used to hunt different animals in variable situations, as opposed to just harp seal under predictable circumstances, which is likely what the "typical" and "variant" forms (Figure 5.25), were used for. This theory is supported by the fact that "Salmon Net-type" endblades were identified in Factory Cove assemblage and not in Phillip's Garden East and Phillip's Garden West assemblages.

Leblanc (1996; 2000) demonstrated that opportunistic foraging took place at Factory Cove, while logistical, seal hunting took place at Phillip's Garden East and Phillip's Garden West. Other assemblages besides Factory Cove that include "Salmon Net-type" endblades are the Party Site, Salmon Net, Peat Garden, Cow Head and Cow Cove. Therefore it is suggested that opportunistic foraging took place at these sites. Some collections, like Factory Cove and Salmon Net, yield both "Salmon Net-type" endblades as well as "typical" and/or "variant" endblades. This may reflect the fact that both opportunistic foraging as well as logistical seal hunting took place at the site(s).

A third explanation for Groswater material culture stylistic variability is that it was chronological. Groswater material culture may have started out as stylistically "typical" and changed over time to stylistically "variant". Hence, stylistically "mixed" Groswater assemblages reflect a transitional stage of stylistic change. Chronological change such as this can occur because of innovation, i.e. socio-cultural or functional cause(s), or 'drift' (Neiman 1995; Shennan and Wilkinson 2001). This chronological hypothesis was tested by dividing Groswater occupation of Newfoundland into three time periods: early, middle and late and then comparing each assemblage's stylistic designation(s) with its chronological designation(s). If material culture variability was chronological, it was hypothesized that "typical" assemblages should be associated with early dates, "mixed" assemblages should correspond with middle dates and "variant" assemblages should correspond with later occupation dates. This explanation was only partially supported since Cow Head, Phillip's Garden East and Phillip's Garden West data do not correspond with the trend. Cow Head produced early and late dates, therefore

according to the hypothesis it should yield "typical" and "variant" artifacts, yet its assemblage is characterized as "other". Both Phillip's Garden East and Phillip's Garden West generated some middle period dates. Thus, according to the hypothesis they should yield partially "mixed" assemblages, yet they yield exclusively "typical" and "variant" assemblages, respectively.

Neither a cultural, chronological nor functional explanation satisfactorily accounts for the difference between "typical" and "variant" material culture because of the data presented by Cow Head, Phillip's Garden East and Phillip's Garden West. However there may be reasons these sites generate conflicting data. Cow Head's data may not support the chronological hypothesis because unlike most Groswater sites considered in this investigation, Cow Head was a workshop site located on a major chert source for Palaeoeskimos in the region, and people may have returned to it over time. It is more difficult to explain why the Phillip's Garden East and Phillip's Garden West data contradict all the explanations for material culture variability in Newfoundland. Phillip's Garden East and Phillip's Garden West are located next to each other, yield overlapping chronological dates and seem to be occupied in the late summer/early spring for the seal hunt, yet they yield stylistically distinct assemblages "typical" and "variant" assemblages. In light of this, Renouf (2005) suggested that the main function of Phillip's Garden West had to do with a seal hunting ritual. If Phillip's Garden West is an exceptional site as Renouf (2005) suggested, perhaps it should be removed from the equation in terms of trying to explain material culture stylistic variability in Newfoundland. Furthermore perhaps Cow Head should be removed from the equation since its function does not

correspond with the rest of the sites being considered here. If Cow Head and Phillip's Garden West are disregarded in terms of explaining material culture stylistic diversity in Newfoundland, than cultural, chronological and functional explanations are each, once again, candidates that deserve further inquiry and proof.

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