UNIVERSITY OF CALGARY

A Multivariate Spatial Analysis of a Thule Dwelling from Assuukaaq Island, Northern Québec

by

Emma Louise Farid

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE

DEGREE OF MASTER OF ARTS

DEPARTMENT OF ARCHAEOLOGY

CALGARY, ALBERTA

SEPTEMBER, 1999

0-612-49564-7

Abstract

This thesis presents an interpretation of spatial patterning within a Thule winter dwelling. The house is from the site JhEv-3, located on Assuukaq Island, Burgoyne Bay, Northern Québec. Understanding of the Neo-Eskimo prehistory of this region is poor and consequently this study represents one of the first studies of Thule occupation in the area.

Spatial patterning of this structure was revealed through data consisting of x and y coordinates and respective depths of all archaeological material. Analytical methods consisting of visual inspection and multivariate statistics indicated the presence of eight clusters. These clusters are distinct in terms of their content, their relation to the house and to one another. The cultural explanation of these clusters as guided by ethnographic, ethnoarchaeological and archaeological information concerning traditional Inuit activities and their spatial correlates. These data provide information concerning activity and debris areas, formational processes, abandonment and post-abandonment activities occurring inside and around Structure 1.

Acknowledgments

This project would not have been possible without the assistance of the Avataq Cultural Institute. Thank you to Claude Pinard and Daniel Gendron who gave me the chance to work with them in Northern Québec. I would also like to thank the Northern Scientific Training Program for their financial support throughout this project. I would like to extend my appreciation to the community of Kangisujuak for their support and to the students of the community, Joanasie Pilurtuut, Siasie Tuniq, Salamiva Nappaaluk and Uqittuq Tertiluk who were patient and hard working throughout the summer of 1997.

I would like to thank my committee members Scott Raymond (University of Calgary), Gerry Oetelaar (University of Calgary), Nigel Waters (University of Calgary) and Karen McCullough (Arctic Insititute of North America) for their helpful comments. I would especially like to thank Gerry Oetelaar who remained enthusiastic and considerate throughout my two years at the University of Calgary . I would like to thank Gisela Engels for helping me to navigate my way through SPSS.

Thank you to Linda Berreth and Leslie Nicholls whom were endlessly patient and supportive. Thank you to Gerry Newlands who supplied me with funny anecdotes and wonderful photographs.

Most importantly I would like to thank my friends and family who supported me, both emotionally and financially, no matter what the situation. I would like to thank my partner Matthew Boyd, my mother (Theresa) and sister (Claire) who always provided words of encouragement, support, and love when I needed them most. I would like to thank Cindy O'Driscoll and Karen Ryan for listening to my late night rantings. Thank you to Stéphane Vallin, my best friend, who always makes me laugh . Thank you to Mark Ivany for being a steadfast friend. Thank you also to Jennifer

Tischer, David Blower, and Tamara Varney who managed to remind me there was a world outside Earth Sciences. Thank you to John O'Connell.

Dedicated to my Mother and Sister

Table of Contents

List of Tables

List of Figures

List of Plates

Chapter 1:Introduction

The purpose of this thesis is to present a spatial analysis of a Thule dwelling from the southern Hudson Strait. Archaeological investigation in this area of the Arctic is relatively sparse and is represented mainly by information concerning Dorset and Thule occupation in Diana Bay, Québec (Plumet 1977, 1979, 1985, 1989, 1994) (Figure 1.1). As a consequence, this part of the southern Hudson Strait represents an archaeological gap in the prehistoric sequence of Thule culture.

In 1996, a survey by Avataq Cultural Institute of Joy Bay, Whitley Bay, and Burgoyne Bay and indicated the presence of extensive prehistoric occupation including numerous semi-subterranean dwellings. These semi-subterranean dwellings were formerly mapped and tested by Barré (1970), who provided a schematic of Dorset and Thule semi-subterranean dwellings in this part of the Arctic. Based on Barré's work and the 1996 survey, site JhEv-3, Assuukaaq Island, Burgoyne Bay (Figures 1.2 and 1.3) was chosen for the investigation of Thule occupation in the 1997 field season. Two of the seven semi-subterranean structures at JhEv-3 were excavated. This thesis is based on the information excavated from Structure 1.

Though it is exceedingly important to provide a culture history of Thule occupation in this area of the Hudson Strait, the primary focus of this thesis is spatial analysis. The common practice in archaeology is to commence with a basic culture history and then proceed with small-scale analyses such as settlement and subsistence studies, spatial analysis and cognitive studies. Small-scale analysis provides critical archaeological information concerning behavioural patterns, which consequently provide 'flesh' to the 'bones' of material culture. It appears, however, that small-scale analysis may provide critical information concerning behaviour and its material correlates which would otherwise be overlooked in a general culture history.

Figure 1.1: Hudson Strait

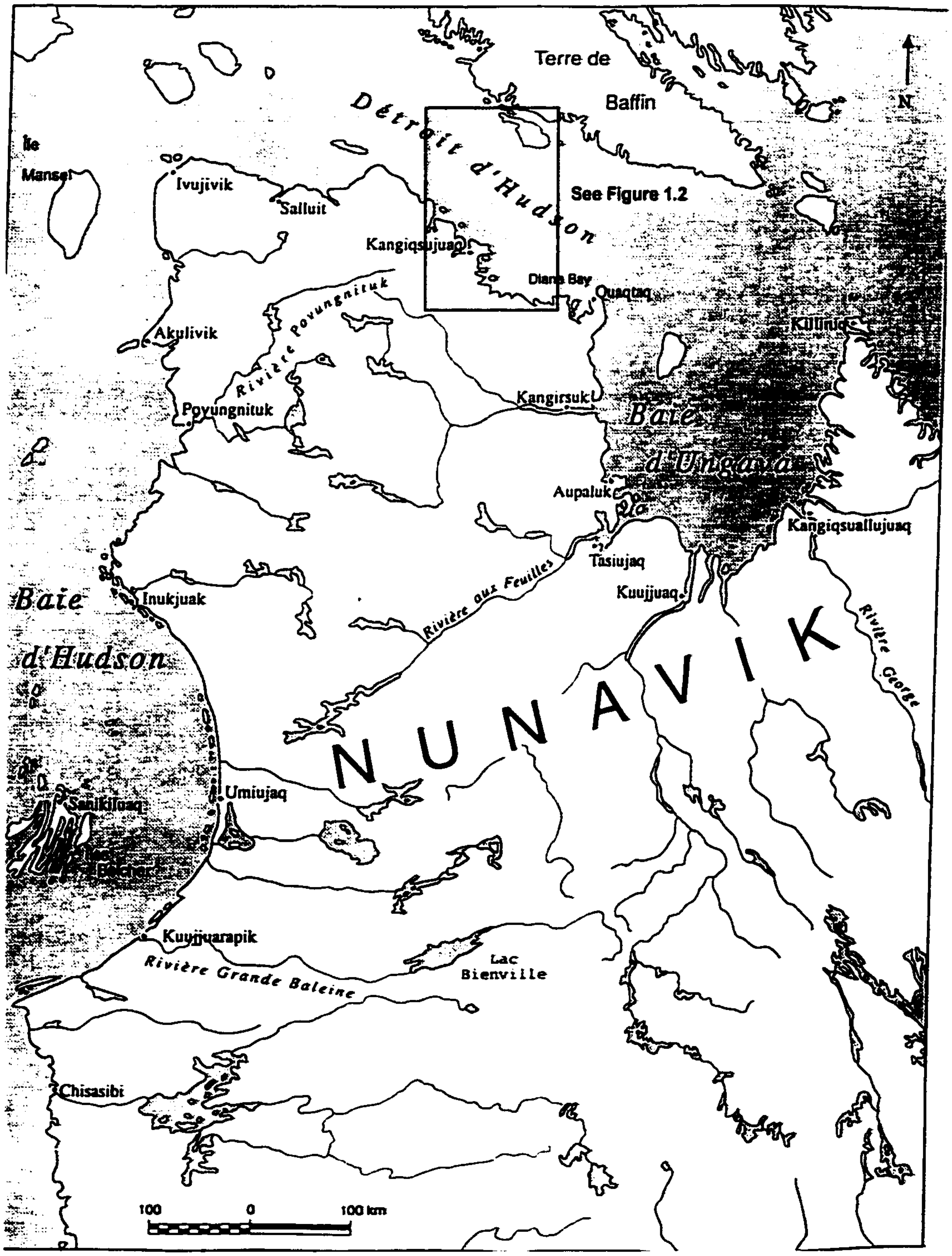
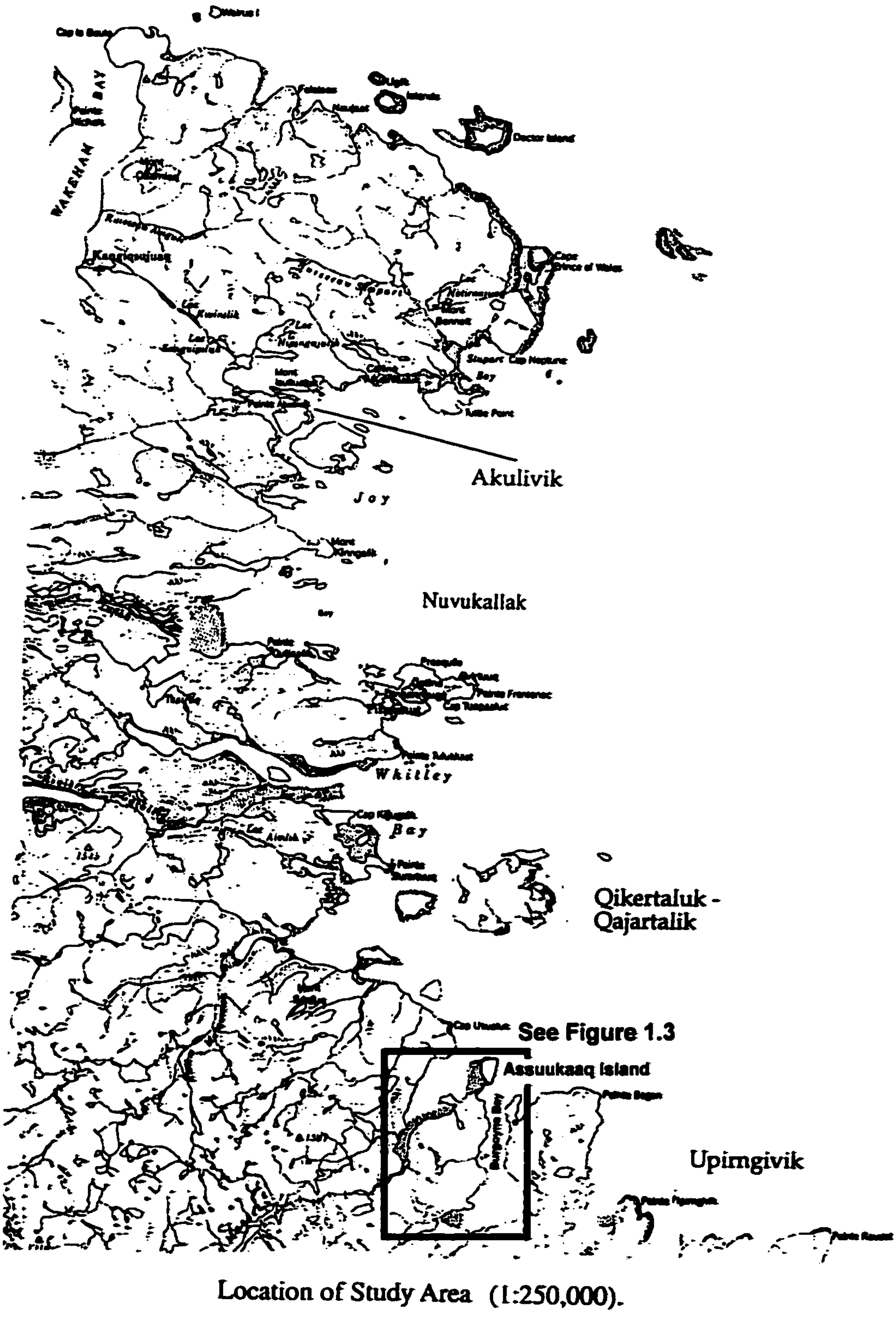
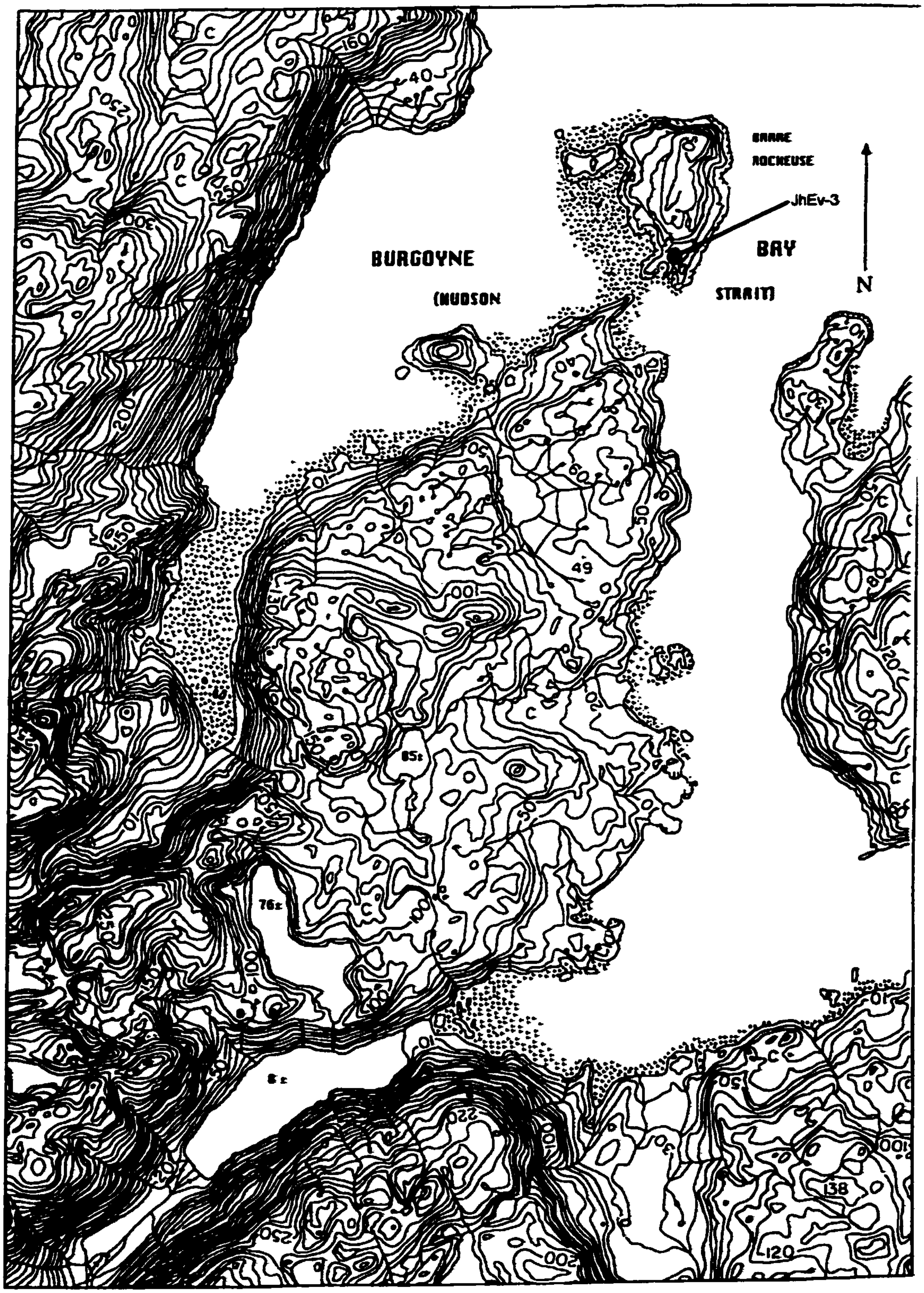


Figure 1.2: Burgoyne Bay



Location of Study Area (1:250,000).

Figure 1.3: Assuukaaq Island



Assuukaaq (Burgoyne Bay) (25 E/4)

When combined, small-scale studies, such as this study, may provide a comprehensive alternative for a general culture history derived solely from archaeological materials.

This thesis is divided into six chapters: (1) Introduction, (2) Natural and Cultural Setting, (3) Theory and Method, (4) Ethnographic, Ethnoarchaeological and Archaeological Comparative Data, (5) Results, and (6) Interpretations and Conclusions.

The purpose of Chapter 2 is to familiarize the reader with the natural environs of this area and provide information concerning the availability of local resources such as raw materials, flora, and fauna. European accounts of Hudson Strait Inuit provide a cursory description of prehistoric and historic Inuit life and suggest the type and frequency of European-Inuit contact. A brief overview of the origins, history and archaeology of the Thule culture provides a cultural 'setting' in which to place the inhabitants of Structure 1 at Assuukaaq Island.

Chapter 3 presents a historical and theoretical overview of spatial studies and provides an outline of the methods used in the analysis.

Chapter 4 presents detailed accounts of spatial behaviour from ethnographic, ethnoarchaeological and archaeological sources. These sources primarily concern historic Inuit cultures in order to produce a strong analogical base. These accounts will provide comparative behavioural data concerning Inuit house construction, interior organization, cleaning, maintenance and abandonment.

Chapter 5 presents archaeological results attained from specific analyses. These results include dwelling measurements, radiocarbon yield, stratigraphic data, artifact classification, lithic debitage data, faunal analysis, and statistical analysis.

Chapter 6 is devoted to presenting interpretations and conclusions resulting from the analysis of Chapter 5. These interpretations provide information concerning period and length of occupation, subsistence and diet, and spatial patterns, which include information about activity areas, maintenance and cleaning and abandonment. Finally, conclusions concerning Thule occupation on Assuukaaq Island are outlined, including the site's relative position within Eastern Arctic Thule prehistory.

Chapter 2: Natural and Cultural Overview of Study Area

Natural Setting

Geographic and Geological Background

The island of Assuukaaq is found on the northern end of Burgoyne Bay located on the southern coast of Hudson Strait 60 km south of Wakeham Bay (Kangiqsujuaq) (Figures 1.1 and 1.2). Its exact geographic coordinates are 61° 14' 42" North and 71° 32' 17" West (Military coordinates: UTM 19VCT637907). The island is considered part of the Northwest Territories as it is only connected to Quebec at low tide and is therefore an 'island' under the jurisdiction of the Northwest Territories. Assuukaaq (Figure 1.3) can be considered part of a coastal island group which includes the areas of Wakeham Bay, Joy Bay, Whitley Bay and Burgoyne Bay. This group is in a relatively sheltered area of the Hudson Strait as its coasts contain numerous bays and inlets.

The southern half of the island is sheltered by Burgoyne Bay and the northern half is exposed to the Hudson Strait. The island is 1.5 km in length and is 1.0 km at its widest point (Corriveau 1998). The name 'Assuukaaq' literally means 'where there is no water/resources'. The island does not contain any source of running water. The mainland, however, does contain abundant sources of fresh water. At low tide the mainland can easily be reached by foot. During July and August the isthmus is heavily traveled by local caribou who reside on both the mainland and the island during this period.

Geologically the area is located within the Laurentien Plateau. According to G.A. Young (1915:197) the Plateau is composed of "gently sloping regions whose even surfaces, save sometimes for the valleys of the large rivers, are broken only by low hills rising a few hundred feet or less above the general level". The bedrock of Assuukaaq island was formed during the Archean period of the Proterozoic era (Geological Survey of Canada Map 1735A), and is composed largely of biotite-granite, biotite gneiss, and diorite (Corriveau 1998; Low 1898).

The raw materials around the island of Assuukaaq include soapstone, milky quartz, sandstone and micaceous sandstone, ironstone, and granite gneiss (Geological Survey of Canada:Map 1735A). High quality soapstone outcrops can be found in Joy and Whitley Bay (Avataq Cultural Institute Field Report 1996-1997, NWT; Geological Survey of Canada : Map 1735A). Driftwood can also be found in the area, although annual abundance is variable.

The rate of postglacial uplift is unknown for Assuukaaq island as the geomorphology has never been studied (Corriveau 1998). However, when comparing information concerning rates of postglacial uplift from Diana Island located 65 km west of Assuukaaq, a rough idea may be attained. Hillaire-Marcel (1979) calculated the rate of emersion in Diana Bay to be 3 metres per thousand years. Using this rate, Corriveau calculated that the location of pre-Dorset sites on Assuukaaq should be found 12 metres higher than the Neoeskimo sites (Corriveau 1998:2). In reality, however, the pre-Dorset sites were found 29 metres higher than the Neoeskimo sites (Corriveau 1998:2). This would indicate a marked regional difference in emersion rates for the southern Hudson Strait. Specifically, it would indicate a rate far higher than 3 m/thousand years for Assuukaaq island.

Climate

The southern area of Hudson Strait, though it is not found within the Arctic Circle, is by definition an arctic environment meaning that it is typified by long cold winters and short summers.

Sunlight

As with most arctic environments, the amount of light available within the area is radically different from season to season. According to Saladin D'Anglure, who studied the area around Wakeham Bay, the southern coast of the Hudson Strait, though an arctic environment, never has complete darkness or complete light (Saladin

D'Anglure 1967:7). Saladin D'Anglure provides a comparison between the light availability of Montréal and Wakeham Bay during winter and summer:

Table 2.1: Light Availability in Wakeham Bay

June 21st	Montreal (45°)	Kangiqsujuaq (60°)
Sunrise	4 h 13'	2 h 35'
Sunset	7 h 50'	9 h 28'
Length of Day	15 h 37'	18 h 53'
December 21st	**Montreal**	**Kangiqsujuaq**
Sunrise	7 h 35'	9 h 02'
Sunset	4 h 21'	2 h 54'
Length of Day	8 h 46'	5 h 52'

(Saladin D'Anglure 1967:8)

According to Saladin D'Anglure the area of Kangiqsujuaq experiences 1500 hours of sunlight per year which converts into 33% of the yearly 24-hour cycle (Saladin D'Anglure 1967:9).

Temperature and Precipitation

The average annual temperature for Cape Hopes Advance, found 70 km SW of Assuukaaq Island, is approximately –7 °C. During the winter the average temperature is –20 °C and in the summer the average is 5 °C (Department of Environment 1974:88; Saladin D'Anglure 1967:11). At Cape Hopes Advance the mean annual amount of precipitation is 12.23 inches, which is 6.51 inches of rainfall and 58.0 inches of snowfall (1 inch of snowfall is 1/10 inch of rain) per year (Sailing Directions: Labrador and Hudson Bay 1974:88). August and September are considered the 'rainy season' (Personal communication: Qipitaq Alaku).

Seasons

Though the seasons are not climatically differentiated within meteorological terms Inuit people of the area separate the year into distinct periods and with it accompanying climatic episodes.

Table 2.2: Inuit Seasons (Saladin D'Anglure 1967:28)

Period	Description
Winter-UKIUQ	Begins in November when ice floes appear on the ocean and when the bays start to freeze. January is considered the coldest month of the year.
Spring-UPIRNGASAQ	Begins at the end of April or beginning of May when snow starts to melt and the ice begins to break up in freshwater areas
Beginning of Summer-UPIRNAALAAQ	Begins early July when the ice floes disappear.
Summer- UPIRNGAAQ	During July and August
Beginning of Autumn-UKIASSAQ	Begins with the first frost during September and with it the decline in vegetation.
Autumn-UKIAQ	Begins in October with the first freezing of fresh water areas and the first fine ice on the sea.

Sea and Ice Conditions

European travel through the vicinity of the Hudson Strait began in the late 16th century and, consequently, there is a wealth of information concerning sea and ice conditions of the area. The most detailed ice records, however, are from the late 19th century when numerous studies and explorations were funded by the Geological Survey of Canada and the Department of Marine and Fisheries.

The effects of both currents and tides are appreciable and have been duly noted in early voyages. According to William E. Parry (1824:9) the Hudson Strait is "...completely open to the influence of the whole Atlantic." The southern part of the Hudson Strait is under the influence of western currents from Hudson Bay and northern currents coming down from Baffin Island. Captain William W. Coates comments on the tides along the northern Hudson Strait by writing : "...we had a regular ebb and flood and stout tide, and flows nine and a half hours full and change" (Barrow 1852:15). According to Payne (1887:7), currents flow most strongly westward on the north shore of the straits and eastward on the southern shore.Tides are radically different from beginning to end. These differences, however, are regular and, therefore, predictable. Average high tide in Wakeham Bay was measured at 28.1 feet and average low tide measured at 7.2 feet (Saladin D'Anglure 1967:23).

Nineteenth century records provide a comprehensive account of ice conditions around the Hudson Strait. Ice conditions are considered treacherous when entering the strait as they are affected by the currents and the winds, which, combined, can prove dangerous when attempting to navigate the strait (Wakeham 1898). Gordon (1887:42) divides the ice conditions along the southern coast of the Hudson Strait into three types: (1) icebergs, which can be found in the strait, more often on the north end, at all times of year; (2) young ice floes, which have been formed from the preceding winter and "reaches to considerable thickness in December" (Gordon 1887:42); (3) heavy arctic ice/old ice, which is found in the area in the latter part of October and is described as being rough, hummocky, and discolored. According to most accounts, ice does not disappear from the Strait until late July, although, it can vary widely from year to year. At the end of August the sea is completely devoid of ice until mid-October when the bays start to freeze. The sea starts to freeze in November/December. Consequently, July to October is considered by Europeans to be the 'navigable' period in this area of the Hudson Strait.

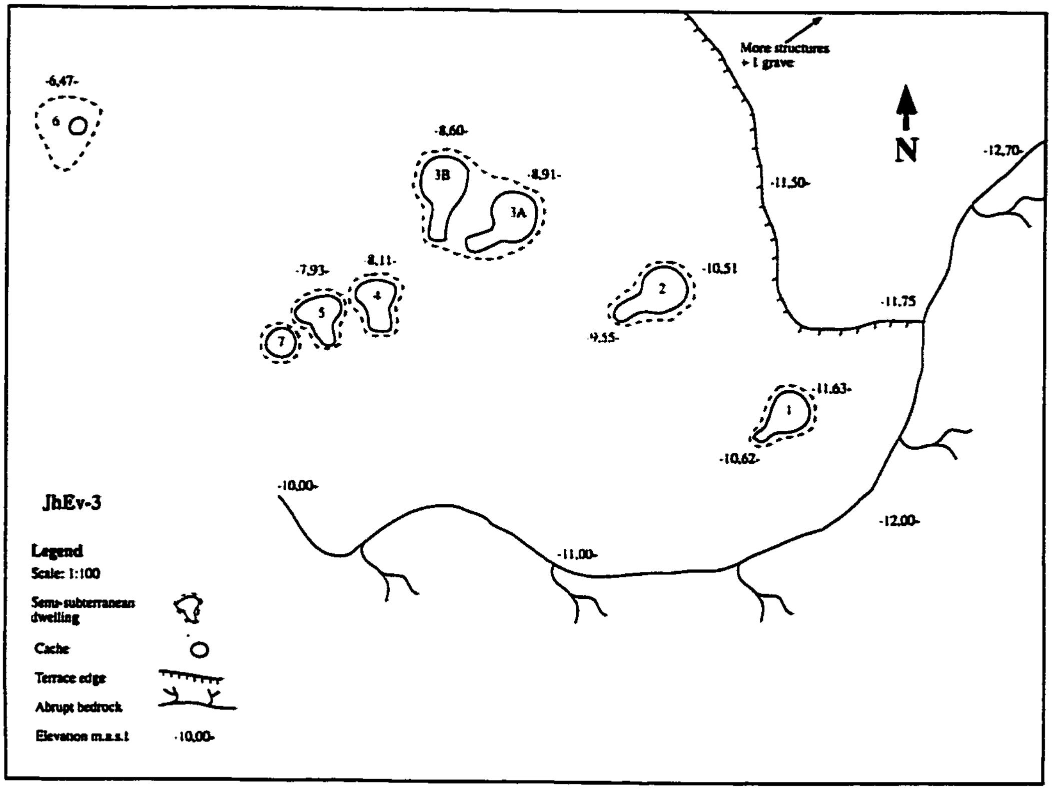
Site Description

The site, JhEv-3, is located on the southwestern portion of the island which is well sheltered and easily accessible at both low and high tide (Figure 2.1). Structure 1 of the site is located on downward-sloping terrain and is relatively well sheltered by a wall of bedrock that forms a barrier between the unsheltered portion of the island and the valley where the site is located.

Local Resources

Local resources available in the area of Assuukaaq Island include a variety of terrestrial and marine mammals in addition to sedentary and migratory birds. Many of these animals were procured by local Inuit groups for subsistence, however, as most animals were available only seasonally, knowledge of migratory patterns and behavior

Figure 2.1: Site Map



were critical. Figures 2.2 to 2.4 outline the faunal resources available in the area. Table 2.3 provides an Inuit perspective of seasonal climate and correlated animal behavior. A more extensive description of the animals represented at Structure 1 will be outlined in Chapter 5.

Fauna

Figure 2.2: Terrestrial Mammals

	MONTHS AVAILABLE											
SPECIES	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**
Arctic Fox (*Alopex lagopus ungava)*	Cyclical											
Polar Bear (*Ursus maritimus)*							—					
Caribou (*Rangifer tarandus)*	—	—	—					—	—	—	—	—
Arctic Hare (*Lepus arcticus)*	—	—	—	—	—	—	—	—	—	—	—	—
Otter (*Lontra canadensis)*			—	—	—	—	—					
Mink *(Mustela vison)*			—	—	—	—	—					
Brown lemming *(Lemmus sibiricus)*	—	—	—	—	—	—	—	—	—	—	—	—

(Gordon 1887; Saladin D'Anglure 1967; Banfield 1974)

Figure 2.3: Marine Mammals

	MONTHS AVAILABLE											
SPECIES	**S**	**O**	**N**	**D**	**J**	**F**	**M**	**A**	**M**	**J**	**J**	**A**
Harbour Seal (*Phoca vitulina)*	Cyclical											
Ringed Seal (*Phoca hispida*)	—	—	—	—	—	—	—	—	—	—	—	—
Harp Seal (*Phoca groenlandica)*	—										—	—
Bearded Seal (*Erignathus barbatus)*	—	—	—	—	—	—	—	—	—	—	—	—
Killer Whale (*Orcinus orcas)*											—	—
Walrus (*Odobenus rosmarus)*		—	—						—	—	—	
Beluga (*Delphinapterus leucas)*	—	—							—	—	—	—
Bowhead (*Balaena mysticetus)*									—	—	—	

(Banfield 1974; Gordon 1887; MacLaren Atlantic Ltd. 1978; Saladin D'Anglure 1967)

Figure 2.4: Birds

SPECIES	S	O	N	D	J	F	M	A	M	J	J	A
	MONTHS AVAILABLE											
Northern Fulmar (*Fulmarus glacialis*)	—							—	—	—	—	—
Willow Ptarmigan (*Lagopus lagopus*)	—	—					—	—	—	—	—	—
Rock Ptarmigan (*Lagopus mutus*)	—	—					—	—	—	—	—	—
Thicked-billed murre (*Uria lomvia*)	—							—	—	—	—	—
Common Eider (*Somateria mollissima*)	—							—	—	—	—	—
King Eider (*Somateria spectabilis*)	—	—	—						—	—	—	—
Black Guillemot (*Cepphus grylle*)	—							—	—	—	—	—
Canada Goose (*Branta canadensis*)	—											
Snow Goose (*Chen caerulescens*)	—											
Common Loon (*Gavia immer*)	—										—	—
Arctic Loon (*Gavia stellata*)	—										—	—
Herring Gull (*Larus argentatus*)	—								—	—	—	—

(Godfrey 1966; Gordon 1887; MacLaren Atlantic Ltd. 1978; Saladin D'Anglure 1967)

Table 2.3: Inuit Faunal Schedule

Month	Hawkes (1916:28-29)	Saladin D'Anglure (1967:26-27)
January	Nelekaituk- "Coldest month for frost"	NALIRQAITUQ- The coldest time of the year
February	Koblut- "Ground cracked by frost"-	AVUNNITI-When seals sometimes collapse
March	Netacelut- "the month of the young jar seal"	NASSIAALIUT- When seal (ringed seal) pups are born
April	Teyelulut "The month of the young bearded seal"	TIRILLULIUT-When bearded seal pups born
May	Noyalut "the month of fawning"	NURRALIUT-When the caribou born
June	Munilut "egg-month"	MANNILIUT-When gull eggs are collected
July	Kituyialut "mosquito month"	SAGGARUT-When the caribou's hair/hide is short
August	Punalut "berry month"	AKULLIRUT-When caribou hair/hide is not long, but not short.
September	Qonolilut "fading-month"-	AMIRAIJARUT-When male caribou shed the velvet from their antlers
October	Not provided	TURRUATIJJUT-When caribou hair is long.
November	Not provided	NANGARTIRUT-Only bays frozen, provides easy access for transportation.
December	Sikalut- "Ice Forming Month"-	AJUULIUT- Time when one can see Ajjuuk- which is "the two stars that disappear in the early morning.

Flora

The area around Assuukaaq is dominated by lichen, moss and heath tundra. As a consequence, caribou often traverse this area because lichen and moss represent their dietary staple. During the warmer months, blueberries, cloudberries, partridgeberries and various flowering plants are available and were undoubtedly exploited by local Inuit groups (Payne 1887; Saladin D'Anglure 1967:47-48).

Cultural Setting

Earliest Contact and Description of Hudson Strait Inuit

The first European visit to the region of Hudson Strait was Martin Frobisher during his first voyage in 1576. Frobisher described an abandoned native community in an area between Labrador and Hudson Strait, which by all accounts referred to the southern part of Hudson Strait:

> *And on this syde the sa[yd] hedlands they saw many ilands not far asonder. And there allso they found the walls of xij olde houses of the cuntry like cottages but no people in them. Which cottages seemed rather to have byn work 'of' houses, th[an] dwelling houses where they perchance used to dres leather, trane oyle of some whales or seales, or other great fisshes of whose bones they saw there great atore. And withall they allso espyed in a valley right under them iij houses covered with leather of seales skyns like tents, and allso two dogs. (Frobisher 1867: p.83)*

In 1586, on the second voyage of the 'Moonshine', John Davis reportedly entered Hudson Strait and followed the coast down and up again to Davis Inlet, Labrador. Though very little was written on the subject, Davis was reported to have had contact with the Inuit of the area (Oswalt 1979:39).

In 1610, during the last voyage of Henry Hudson on the ship 'Discovery', the group sailed through Hudson Strait to Hudson Bay and reportedly came into contact with the local Inuit population (Oswalt 1979:52; Vezinet 1982:17).

The next reported encounter was by Henry Ellis in 1746. In his journal Ellis devotes 10 pages to the description of the Hudson Strait Inuit. This represented the first detailed description of this Inuit population (Ellis 1749).

Captain W. Coates (1852:33-34) who spent nearly a total of thirty years voyaging within the Hudson Bay and Strait describes the Hudson Strait Inuit by writing:

> *The Usquemows, all over the streights, are bold, robust, hardy people, undaunted, masculine men, no tokens of poverty or want, with great fat, flatt, greazy faces, litle black percing eyes, good teeth, lank, black, matted hair, with litle[sic] hands and feet, under proportion; a well made back and shoulders; loyns, buttocks, and haunces, well fortified; thighs are pretty full, but their leggs taper into a litle foot. There women weare such an uncouth habitt, as make it extremely difficult for them to move about at all; their shoes, boats [boots], and breaches, are all of a piece, sett of to an extravigant breadth at top, which holds a child, and half their household furniture in each...It will be necessary, before I quitt these parts, to set down my own sentiments and that of others, in regard to the Usquemows, the natural inhabitants of all the northern borders of the Hudson's Bay and Streights, which swarms with robust hardy fellows fitt for the severest exercise, and indeed with such dispositions, as if God's providence in fullness of time had prepared them to receive the yoke of civility.*

William E. Parry describes his encounter with the Hudson Strait Inuit, which took place in July of 1821, by writing:

Upon the whole, it was impossible for us not to receive a very unfavourable impression of the general behaviour, and moral character, of the natives of this part of Hudson's Strait, who seem to have acquired, by an annual intercourse with our ships for nearly a hundred years, many of the vices which unhappily attend a first intercourse with the civilized world. (Parry 1824:15)

In the latter part of 19^{th} century the Government of Canada funded projects to investigate the economic productivity of the Hudson Strait (Bell 1884; Gordon 1887; Low 1896,1897,1898; Payne 1887; Wakeham 1898). These reports include detailed descriptions of navigation and ice conditions, meteorology, geology, geography and natural resources of the area. No attempt was made to seek out local Inuit people; however, cultural information was accumulated based on the researchers encounters with the local population.

Ethnographic research was also a part of the Canadian government's economic and social agenda which began with R.F. Stupart's (1887) ethnographic report. It provided a cursory description of the physical appearance, material culture and subsistence and settlement practices of Stupart Bay Inuit.

A detailed description of Inuit and Indian groups around Fort Chimo was presented in Lucien Turner's (1984) ethnography *Ethnology of the Ungava District.* Turner's ethnology represented the first ethnographic work done on the Ungava Inuit. Turner separates Quebec Inuit into three distinct groups, and is informed that the Inuit along the Hudson Strait are called the Tahágmyut (local spelling:Tarramiut) which means 'those who dwell in the shade' (Turner 1894:178). The Tahágmyut are considered 'dialectically' distinct from the Inuit of Ungava Bay (Turner 1894:178). Turner writes that the Tarramiut's habits and customs '...appear to be entirely distinct from the customs of their neighbors south and east' (Turner 1894:177). Turner's description of the material, social and religious aspects of the Fort Chimo Inuit culture provides a detailed ethnographic synthesis of Inuit within the general vicinity of the southern Hudson Strait.

F.F. Payne spent a total of thirteen months around Cape Prince of Wales, which is located 40 km NE of Assuukaaq Island. In his 1899 publication *Eskimo of the Hudson's Strait*, Payne chronicled the seasonal movements, material culture, and behavior of the Cape Prince of Wales Inuit. He sums up winter activities by stating:

> *During the winter months the Eskimo or Inuite as they call themselves, are found occupying the ground at prominent points along the coast...Here the ever changing tides flowing and returning break up the ice and here the seals, on which they mainly subsist, are found...In these villages they live as long as possible and will not leave until they are compelled to do so through the scarcity of food, but at this time, when a report comes in from another part of the coast that seals are plentiful they will sometimes leave in a body...*(Payne 1899:1)

Payne describes April, May, June and July as being Inuit 'harvest months', as this is when caribou, seals, walrus, beluga, and salmon were hunted for the winter period (Payne 1899:2). August was reserved for hunting caribou, a period when they were sought for their hides which were used for winter clothing and bedding (Payne 1899:3). From September to November walruses were hunted (Payne 1899:6-7). December was the commencement of winter which Payne considered a type of 'hibernation' (Payne 1899:7). As with most ethnographers Payne goes into detail describing the material, social and religious aspects of the Cape Prince Wales Inuit culture.

E.W. Hawkes' (1916) ethnographic work of the Labrador Inuit often refers to their northerly neighbors the 'Tahamiut' or 'Tarramiut' (in local spelling) (Hawkes 1916:23). Hawkes provides material and social information about the Labrador Inuit and compares this with the Inuit of the Ungava region located south of Assuukaaq Island.

The last ethnographic work of the Hudson Strait Inuit, before they were completely subsumed into Euro-Canadian culture, is the work of Bernard Saladin D'Anglure (1967). In 1961, Saladin D'Anglure spent May to September with the Inuit of Wakeham Bay. He provides information concerning 'traditional' (as Saladin defines it) economic, social, and religious behavior of the Wakeham Bay Inuit.

Archaeological Research in Southern Hudson Strait

Bernard Saladin D'Anglure's work around southern Hudson Strait also included several archaeological surveys, which represented the first work of this type done in the area. Saladin D'Anglure's work was primarily devoted to the investigation of Dorset petroglyphs in the islands around Wakeham, Joy, Whitley and Burgoyne Bays (Saladin D'Anglure 1963). However, his surveys also indicated a wealth of prehistoric sites, which, based on surface finds, spanned the pre-Dorset to the historic Inuit period. He noted that the prehistoric sites were all located in areas where present-day Inuit established summer and winter camps based on the availability of rich game resources (Saladin D'Anglure 1963).

W.E. Taylor (1963) later surveyed and tested some of the sites that were mapped by Saladin D'Anglure. These sites included Okiivik I-IV (JjEv-1/2/3/4), Tuperpvikadlak (JjEw-1), Qikertaaluk Island (JhEv-2), Tunit Ipiutaq (JiEv-6) and two grave sites, the Nallak Grave Site (JjEv-6) and Inukshutuyok Island (JiEv-1). At Okiivik IV, Taylor counted over 50 semi-subterranean house ruins. In his small sample assemblage he found a higher ratio of Dorset to Thule artifacts, which he explains by the length of Dorset occupation. This paucity in Thule material may, however, be due to sampling strategies, as opposed to the number of artifacts. Taylor's assemblage was based on surface and sample excavation finds, which inherently favors the higher ratio of Dorset to Thule artifacts since most Thule artifacts are found in relatively deep subsoil. The Dorset artifacts found included endscrapers, bifacially worked endblades, ground stone tools and thin and rounded rimmed soapstone vessel fragments. Thule artifacts included thick rimmed soapstone vessel fragments, toy soapstone pots, wooden dolls, a bone knife handle and a sled-runner fragment.

In the late 1960s George Barré did an extensive survey of the area from Wakeham Bay to the mouth of Burgoyne Bay (Barré 1970). Barré surveyed and mapped 16 sites along the coast. Four of these sites included Okiivik I-IV, previously mapped and surveyed by Saladin D'Anglure and W.E. Taylor. Barré's investigation included test pits and surface collections of these sites. Barré concluded that the sites, which were dominated by semi-subterranean dwelling, were occupied during the pre-Dorset, Dorset, Thule and historic Inuit periods (Barré 1970:50-52). Barré provides a culture specific artifact inventory, stratigraphic profiles, subsistence strategies and dwelling typologies for each site. As with Taylor's surface collections, Barré's assemblage was dominated by pre-Dorset and Dorset artifacts such as microblades, blades, scrapers, concave-based points, cores, burins, burin spalls, and polished slate (Barré 1970:83-85). Barré's small Thule assemblage included pieces of perforated slate and thick-rimmed soapstone vessel fragments (Barré 1970:85). Thule cultural affiliation is based on house type and construction, rather than artifact assemblage (Barré 1970:85-86). The interpretation of historic Inuit occupation is based on the presence of iron axes (Barré 1970:86).

Beginning in 1968 the Programme Tuvaaluk, which was headed by Patrick Plumet, focused on surveying and excavating northern Labrador, Ungava Bay and coastal regions as far north as Diana Bay. According to Plumet, before Tuvaaluk's investigations the area of Ungava was considered a 'terra incognita' for archaeologists (Plumet and Gangloff 1990:9). The Tuvaaluk program's research indicated a high frequency of Thule and historic Inuit occupation along the northern coast of Labrador (Plumet and Gangloff 1990). Plumet surveyed and excavated Dorset and Thule sites in Diana Bay (65 km SW of Assuukaaq) for over 10 years. The information collected from Dorset and Thule sites from this area indicates a possible interaction and contemporaneity between the two cultures (Plumet 1979, 1989).

Though Plumet's emphasis is on the Paleoeskimo component in Diana Bay, his excavations are of both Dorset and Thule sites.

Eastern Arctic Thule: An Overview

Origins of the Thule Culture

The earliest manifestation of the Thule culture originated from the islands around the Bering Strait and is represented by the maritime-adapted Old Bering Sea and Okvik traditions (Ackerman 1984; Dumond 1977). The chronological position of Old Bering Sea and Okvik traditions is widely debated. According to Russian researchers Alekseev, Arutiunov and Sergeev (1972) the Old Bering Sea represents the older of the two. The Okvik phase, according to them, originated at the same time as the late Old Bering Sea phase and can be associated with the later Birnirk culture based on harpoon head typology. In contrast, Dikov's (1979) view is that Okvik resembles earlier Neolithic cultures and is therefore more ancient than the Old Bering Sea culture. However, based on radiocarbon dates and similarities of major artifact types between sites, Old Bering Sea and Okvik phases can be considered contemporaneous regional variants of the same culture occurring in the Bering Strait between 200 B.C. and 700 A.D (Ackerman 1984: Dumond 1977).

Emerging from the Old Bering Sea culture between 300 A.D. and 600 A. D. are the Birnirk and Punuk cultures (Ackerman 1984: Dumond 1977; Giddings 1967).These two cultures are not simply considered amalgams of the Old Bering Sea and Okvik cultures but "different and yet shared cultural complexes" (Ackerman 1984:112). Birnirk, considered the older of the two, emerged around 300 A.D and lasted until 900 A.D. (Ackerman 1984; Dumond 1977). Birnirk culture was geographically represented on the Chukchi Sea coast where subsistence was based on small sea mammals. Evidence from the Walakpa site indicates a local *in situ* development from Birnirk to Thule around 900 A.D (Stanford 1976).

The Punuk culture, first defined by Henry Collins (1932), emerged on St. Lawrence Island and along the Chukchi peninsula and is dated between 600 to 1500 A.D. (Ackerman 1984; Dumond 1977; Giddings 1967). Punuk subsistence was largely based on large sea mammals (Ackerman 1984). Local development from Punuk to Thule-Punuk was primarily restricted to the coastal area around St. Lawrence Island.

Around 1000 A.D., as Birnirk and Punuk cultures developed into Western Thule culture on the northern and western coasts of Alaska, Thule groups of these areas began moving eastward. McGhee (1969/70) presented the first hypothesis for this migration, arguing that it occurred in response to the effects of the neo-Atlantic climatic episode from A.D. 900 to 1200. This warming episode may have increased the eastern and southern extent of the bowhead whale feeding and migration grounds. McGhee (1969/70) proposed that the Thule exploited this increase by following the bowhead whales and by doing so rapidly migrated eastward. Other factors which may have led to the eastward expansion of the Thule culture include population and social pressure (Maxwell 1985; Morrison 1983; 1999), and the exploration for new exotic raw materials (Morrison 1983; Yorga 1979).

Archaeological evidence indicates that the Thule migration occurred in two waves. The initial migration took a northerly route and by A.D. 1200 had reached Greenland via the Parry Channel (Maxwell 1985; McGhee 1969/70; 1984b; Morrison 1999). The second phase of Thule expansion occurred between A.D. 1200-1300 and followed a more southerly route (Maxwell 1985; McGhee 1984a and 1984b; Morrison 1983). This expansion brought with it the settlement of areas as far south as Hudson Strait and Hudson Bay (Maxwell 1985; McGhee 1984b).

Thule Material Culture

This maritime-oriented group's main forms of transportation were the kayak, umiak (large 'woman's boat') and dogsled. According to Maxwell (1985:262) the Thule were "the most gadget-oriented people of prehistory", which is illustrated by their high tool diversity. Hunting kits for both large and small sea mammals attest to the Thule culture's preparation for any situation. Large whale hunting kits are represented by various toggles, harpoon types, foreshafts, lance heads and floats (Maxwell 1985:266). Hunting equipment for small sea mammals were smaller versions of whale hunting equipment. Hunting kits for small sea mammals from Post-Classic Thule sites become increasingly elaborate. This is thought to indicate the importance of small sea mammals during this period (Maxwell 1985:272-273). Caribou were hunted by bow and arrow; birds by bolas and bird spears and fish by three-pronged leisters (Maxwell 1985). Animals were prepared for cooking by the use of men's knives or '*pana*', which took many forms depending on the task and animal being butchered (Boas 1888; Maxwell 1985). An ulu or 'woman's knife' which was an all-purpose household knife made of bone and slate was used to prepare hides for manufacture and meat for cooking and consumption (Maxwell 1985). Meat was prepared by cooking or boiling it in a rectangular soapstone cooking vessel that was heated by a soapstone lamp fueled by blubber which provided the household with light, warmth and fuel for cooking (Maxwell 1985). Elaborate sewing kits, some of which include various bone and ivory needles, thimbles, and hide scrapers indicate the importance of hide preparation for the production of clothing, tents, and kayak and umiak covers (Maxwell 1985).

Canadian Thule Subsistence and Settlement

The Thule who inhabited the Canadian Arctic between the 12th and 15th centuries have been characterized as large open-sea whale hunters and are defined as the 'Classic' Thule (Maxwell 1985). Settlements usually consisted of 4-6 coastally situated houses represented by semi-subterranean dwellings constructed of sod, stone and/or whale bone. As a whole, these households represented a whaling-crew and the basic community unit (Dawson 1998; Maxwell 1985; McCartney 1979). The importance of whale hunting has been overemphasized in the past and studies now indicate that Thule communities were far more economically diverse than was once thought (McCartney 1980; Savelle and McCartney 1991,1994). Savelle and McCartney (1991) separate whaling areas into core, an area where bowhead whale abundance is the highest and most predictable and periphery an area where annual bowhead whale appearance is less frequent and predictable. The authors found that Thule communities located in the core area had a typical 'Classic Thule' economic base (Savelle and McCartney 1988, 1991, 1994). Conversely, communities in the periphery were found to be more economically diverse (Savelle and McCartney 1988, 1991, 1994).

By the late 15th century, the availability of large whales decreased as a result of the climatic conditions created by the Little Ice Age (Maxwell 1985; Schledermann 1976). Concurrently, the increased amount of ice area attracted a high frequency of harp and ringed seals, who spent a great deal of their time on ice floes and pans (Banfield 1974; Schledermann 1976). This cultural period, named the 'Post Classic', was therefore marked by a shift from economic exploitation of large whales to a reliance on seals, walrus, small whales and terrestrial resources (Maxwell 1985). This economic transition produced a distinctive change in settlement type and size. Settlements shifted from coastal semi-subterranean communities to large villages of snow dwellings positioned on the sea ice. The semi-subterranean dwelling was, however, retained in areas such as Northern Hudson Bay and Southern Hudson Strait. According to Dawson (1998:78), this type of settlement change may have required '... the replacement of the *community* with the *household* as a primary unit of economic production'. Whaling crews may have been replaced by small seal-hunting groups based on kinship and consequently sharing partnerships, and economic productivity became invariably tied with kin/household as opposed to the community as a whole. This type of subsistence-settlement base is the one associated with the Historic Inuit culture. This latter period is typified by extensive European contact and subsequent material and social transition from this contact (Dawson 1998).

Thule Along the Southern Hudson Strait

Knowledge of the Thule regional culture along the southern Hudson Strait is scant (McGhee 1984b; Plumet 1977; Wright 1979). Settlement into the Hudson Strait is thought to have occurred via southeastern Baffin Island around A.D. 1300 (Plumet 1977; Wright 1979). As the Quebec Dorset remained in the region until the 15^{th} century, there has been much speculation as to the amount and type of interaction these Thule migrants had with Paleoeskimo groups (Plumet 1977, 1979, 1989; Wright 1979). Preliminary archaeological investigations indicate that Southern Hudson Strait Thule subsistence and settlement practices were similar to other eastern Arctic Thule groups. Except for the retainment of the semi-subterranean sod house, the material culture associated with the progression from Classic to Post-Classic to Historic Inuit follows that of other Eastern Arctic Thule groups (Barré 1970; Wright 1979).

Summary

Two waves of Thule migration to the east occurred, the first in A.D. 1000 and the second in A.D. 1200 (Arnold 1986). Present evidence indicates this migration was caused by environmental, material and social pressures (Maxwell 1985; McGhee 1969/70; Morrison 1983; Yorga 1979). The second wave brought settlement into southern Hudson Strait by A.D. 1300. Archaeological sites located on the island of Assuukaaq represent this distinctive and long culture history. The area is considered the 'richest' in the Hudson Strait, as resources such as ringed and bearded seal, walrus, beluga, migratory birds and caribou provide a relatively stable local economy (Saladin D'Anglure 1967). Historical and ethnographic accounts indicate that the inhabitants had a settlement-subsistence base typical of the Post-Classic Thule, except that the stone/sod house was used in the Hudson Strait until the late 19^{th} and early 20^{th} century (Dawson 1998; Jugini Imiq: Personal Communication; Maxwell 1985). These accounts provide a comparative base for interpreting archaeological evidence collected in this area and more generally a source of ethnographic analogy for the Thule culture of the southern Hudson Strait.

Chapter 3: Theory and Method

Spatial Studies

Historic Overview

Anthropology and archaeology have a long history regarding the research into settlements, households and spatial use among prehistoric and contemporary peoples. Anthropological explanations and theories concerning spatial perceptions and human manifestations of space are owed to the works of 19th century sociologists Emile Durkheim and Marcel Mauss (1963) who aspired to provide social explanations of why people use space the way they do.

Some of the first spatial studies in archaeology, (Fox 1943; Stjernquist 1966), which commenced in the 1940s, were of a macroscale level and focused on the creation and interpretation of distribution maps of large settlements and archaeological materials within these settlements. The goal of this type of research was to outline trade routes, migration, diffusion, and invasion between large areas and also to produce a general layout of large settlements (Hodder and Orton 1976). However, in the 1970s and 1980s spatial studies became increasingly focused on a microscale level of analysis as it became apparent that more could be understood about a culture by examining the spatial distribution of archaeological materials *within* households of a particular settlement.

Early research methodologies focused on quantitative, rather than qualitative procedures which led to the use of the term 'spatial analysis'. Early spatial research of this type, which included work by Whallon (1973), Binford (1978) and Dekin (1976), attempted to use statistical measurements to uncover activities that had occurred at a site. This type of research tended to overestimate the infallibility of statistics and often ignored important 'social' information. As early as 1976 (Hodder and Orton 1976:240), however, archaeologists were warned about the overuse of statistics and the possibility for unrelated processes to produce the same spatial signatures. This early research also tended to view sites functionally. Sites were assumed to have been produced by a linear string of events, that is, spatially discrete areas were produced by one activity based on the use of one specific tool kit (Wandsnider 1996).

Research during the past fifteen years (Blankholm 1991; Carr 1984, 1985; Enloe *et al.* 1994; Keeley 1991; Koetje 1987; Kroll and Price 1991; Petragalia *et al.* 1994; Simek 1984; Smith *et al.* 1995; Tipps 1993), however, has been slowly focusing on the formational view of a site and its effect on the interpretations of spatially discrete areas (Wandsnider 1996). Current spatial research in archaeology is also becoming increasingly directed toward explaining social aspects that may have had a role in the creation and view of these spatially discrete areas. That is to say, studies are emphasizing cultural aspects other than pure 'function' that may have had a role in the placement and perception of spatially defined areas. Research under the heading 'Activity Area Research' as advocated by Susan Kent (1984; 1987), falls under this type of socially focused spatial analysis. This type of cognitive work in archaeology relies on borrowed theories from architecture, anthropology, sociology and psychology in order to explain archaeological spatial phenomena (Lawrence and Low 1990; Parker Pearson and Richards 1994).

<u>Spatial Analysis and Activity Area Research</u>

Spatial analysis is based on the assumption that human activity is patterned and that archaeological material, which is a result of this patterning, can be understood in terms of its distribution. Material distributions are subsequently subjected to a set of statistical tests in order to reveal the presence, size and composition of artifact clusters. Analyses labelled under the heading 'activity area research', however, is the product of a 'conceptual shift' within the umbrella of 'spatial analysis', a shift which occurred in the early 1980s and is outlined above (Wandsnider 1996). Activity area research is considered a form of 'spatial analysis' that is guided primarily by the social rather than by the statistical.

Binford's (1978) ethnoarchaeological research of a Nunamiut hunting stand and Yellen's (1977) work of !Kung residential camps, indicated the presence of certain 'areas' resulting from spatially bounded activities. It is from these two studies that Simek (1984:11-17) distinguished between *generalized activity areas*, which are associated with hearths and structures and have highly diverse assemblages of secondary refuse, and *specific activity areas*, which are peripheral to the generalized activity areas and are 'externally heterogeneous' primary debris areas (Wandsnider 1996). Susan Kent (1984:1), a major proponent of 'activity area research', provided a definition of an activity area by stating it is "...the locus at which a particular human event occurred... and that activities performed at such areas are generally *[assumed]* both sex-specific and monofunctional ".

Spatial Theories

Ergonomic Model

Ergonomics is defined as the " the study of the efficiency of persons in their working environment" (Thompson 1995). The ergonomic model, advocated and advanced by Binford (1978), Kent (1984) and Gould and Yellen (1987), considers the mechanical properties of a certain activity as the main discriminating factor for the position and size of a work area. These mechanical properties include duration and frequency of an activity, number of individuals needed, and the relative size of associated materials (Anderson 1982). Binford (1978) and Kent (1984) reject the view that ergonomic considerations of space are affected by social factors. According to this theory it is the type of activity and technology associated with this activity that determine spatial patterning and use. According to Binford (1978:354) "we can build a theory of space use and we can understand spatial patterning without recourse to vague notions of social context".

Grammatical Model

Hillier and Hanson, the main proponents of the grammatical model, attempt to understand the use of space through syntactical rules (Hillier *et al.* 1976; Hillier and Hanson 1984). According to Hillier and Hanson the way in which space is divided within a society is based on local rules, a syntax of sorts, which provides the basis for spatial organizations. This theory considers spatial organization and social structures to be a type of 'morphic language' that can be understood by unraveling the "principles of pattern generation in both" (Hillier *et al.* 1976:348). Consequently, Hillier and Hanson view the use of space as a type of grammar which can be reduced to and understood by its basic components or syntax. Edmund Leach (1978:338) rejects this type of theory on the basis that it is simply inapplicable for archaeologists to use in the absence of ethnographies and written records.

Proxemic Model

E.T. Hall is considered the major proponent of proxemics research and defines it as "the study of man's transactions as he perceives and uses intimate, personal, social and public space in various settings" (Hall 1974:2). Hall's research indicates that different ethnic groups and subcultures manifest different proxemic rules. Different groups will have different codes or rules of spatial behavior and represent a form of nonverbal communication. Consequently, cultural and situational contexts dictate an individuals use of space. According to Hall (1974) proxemic codes are manifested in a cultures expression of space which are found in the built environment and in the organization of portable items such as furniture.

Dramaturgical Model

Goffman attempted to explain human perceptions and use of space through the application of theatrical language and reasoning in his 1959 publication *The Presentation of Self in Everyday Life*. He considered households to be divided by back and front activities which he likens to backstage and frontstage activities in a theatre (Goffman 1959). According to Goffman human activities are bounded by the area in which they are performed. Goffman's model, originally based on the study of American middle class families, was altered by Alice Portnoy's use of Yellen's study of the !Kung San (Portnoy 1981). She postulates that a !Kung San hut can be considered the 'family back region' and the area directly in front of the hut, that is the hearth, can be considered the 'family front region'(Portnoy 1981:219-220). The centre or open space of the !Kung San camp can be considered the 'communal front region' and special purpose activity areas are regarded as 'communal back regions'(Portnoy 1981:220-221). According to Portnoy (1981), types of activities and the individual's perception of these activities are bounded to the space in which they are performed.

Symbolic Model

'Symbolic' approaches of spatial meaning that consider the built environment as a direct expression of social and political factors fall into three areas. The first is Levi-Straussian structuralism, which views the use of space as a result of unconscious mental representation based on binary oppositions (Levi-Strauss, 1963). Levi-Strauss (1963) separates space within a household into dichotomized oppositions, male-female, light-dark, right-left, etc. This theory is based on the assumption of social universals and therefore is considered applicable regardless of its spatial or temporal context.

Further discourse in this vein was pursued and altered by Bourdieu (1973) who suggested that these binary oppositions were more like mnemonic devices that provided people with a means of recalling important schemes governing social discourse (Bourdieu 1973; 1977). An application of Bourdieu's structuralist view can be found in Henrietta Moore's (1986) work on the Marakwet of Kenya. According to Moore the Marakwet use and move through space in a way that reinforces gender ideologies by delineating spatially segregated areas as a reminder of this division (Moore 1986, Part II). Moore (1986:103-105) points out, however, that this gender 'rule' of spatial segregation is enforced only 60% of the time. This calls into question the model's applicability to archaeology.

The third form of symbolic theory construes the use of space as *metaphor*. Work of this type was first attempted by Griaule with Dogon households in West Africa (Griaule 1954). Dogon households were interpreted as representations of a male body. Even though this study has proven to be erroneous, it illustrates the possibility for such studies to enlighten our knowledge of perceptions of space in households (Parker Pearson and Richards 1994:20). Preston Blier's study of the Batammaliba represents the articulation of house as metaphor. Preston Blier (1987) illustrates that the house is used to reinforce cosmological relationships between human, earth and sky. In Inuit society Ackerman and other researchers of Inuit culture have noted that an overwhelming number of Inuit communities, all geographically distinct, interpret the house as a womb or in some way connected to the female aspect of society (Ackerman 1990; Bodenhorn 1990; Fienup-Riordan 1983, 1986, 1994). Ackerman (1990) interprets this metaphor as a means of reinforcing the notion of matrilineality. According to Lawrence and Low (1990:473) "The use of metaphor in symbolic analysis of the built environment is one of the most powerful and successful approaches to date. It merges the strength of cultural meanings and interpretation with concrete architecture".

Gender and Space

Explanations of spatial use and perceptions often rely on a dichotomized view of gender, so that if one material or spatial aspect is male, the opposite is assumed to be female. Therefore little critical investigation has gone into the illustrating alternative views of gender. Ruth Tringham's (1991) article "Households with Faces" represents a critical overview of gender in archaeological spatial studies. Tringham (1991:101) postulates that household archaeology has made strong implicit assumptions about generic gender relations that have formed the foundations for the theoretical formulations of household archaeological studies. Tringham advocates the alternative and critical use of ethnographic and ethnoarchaeological studies, which may consequently create alternative methodologies and theories (Tringham 1991:102). Ethnographic analogy often relies on the extraction of general behavioral aspects of culture. Tringham feels that if archaeologists investigate the 'uncommon' aspects of gender division, a vastly altered picture of sexual division and its material correlates would emerge. This practice could enable the archaeologist to turn males and females from cultures 'x' or 'y', into people with feelings, perceptions and ideologies from a specific culture and enable one to surpass the practice of equating tools with gender (Tringham 1991:108).

Ethnographic and Ethnoarchaeological Methods

Ethnography and Ethnographic Analogy

Ethnography provides "analogs from contemporary observations that aid in the identification of archaeological data and patterning" (Kent 1987:36). Ethnographic analogy uses behavior recorded for living cultures to interpret material manifestations in a comparable archaeological context. Ethnographic analogy, however, should be used with caution as behaviors are context specific and should be treated as such (Wylie 1985).

Ethnoarchaeology

Though the methods of ethnoarchaeology are sometimes similar to ethnography the goals are different. According to Kent (1987:37) "The goals of ethnoarchaeology are to formulate and test archaeologically oriented and/or derived methods, hypotheses, models and theories with ethnographic data". Ethnoarchaeology, though different in its goals, relies on and cannot stand alone without ethnography. Ethnoarchaeology attempts to provide possible explanations for certain archaeological manifestations thereby increasing the accuracy of archaeological interpretations (O'Connell 1995).

Summary

The study of human use of space is a relatively new phenomena in archaeology and consequently theories and methods are constantly developing and evolving. Models for the interpretation of spatial patterns are often borrowed from outside the discipline as indicated from the main models outlined above. To review, these they include: (1) the Ergonomic model which considers the mechanical properties of a certain activity as the main discriminating factor for the position and size of a work area; (2) the Grammatical model which views local rules (local syntax) as providing the basis for spatial use and organization; (3) the Proxemics model which considers an individuals perception of space to be a culturally derived phenomenon (4) the Dramaturigical model which views human activities as bounded by the area in which they are performed and (5) the Symbolic model which considers the built environment as a direct expression of social and political factors. Within these approaches the concept of gender and spatial use among gender groups is peripherally considered. It is however, the purpose of this thesis, to explore the issue of gender within spatial studies and more specifically within Thule archaeology. The primary tool for the discussion of gender in this study is through the use of ethnography and ethnoarchaeology. The Symbolic and Ergonomic models are the two models which were used to guide this study.

Chapter 4:Ethnographic, Ethnoarchaeological and Archaeological Data

House Construction

The primary focus of this section is to understand what materials and areas were preferred in the construction of a house, how the house was constructed and what individuals were assigned the task of construction.

Birket-Smith (1924:149-150) describes house construction in the Egedesminde district:

Apart from the smallest of the modern house the deviation from the old type will not be particularly great. When a house, igdlo, is built, both men and women have to work. Formerly the actual building of the house fell entirely upon the women, the men only taking charge of the wood work. First the ground is dug out and the walls are erected. They are made of stone alternating with sods, and just high enough for the inhabitants to stand upright in the house...Sods are excavated with an ordinary spade, or they are cut loose with an adze...

Birket Smith (1959:123-124; Figure 4.1) also describes Polar Eskimo sod house construction:

> *The most admirable feature of this building is its manner of construction, for the Eskimos have themselves invented the cantilever system that is used in modern bridges: at various points large stone slabs project over the low walls; their outer ends are held down by large stones which act as a counter-balance, whilst their inner ends bear a large slab of stone that closes the roof at the top. It is obvious that the converging stones have their prototype in the whale bones of former times. The whole dome is covered with sods.*

Figure 4.1 Polar Eskimo Sod House (Birket-Smith 1959)

A similar type of description is repeated over and over in literature from all areas of the Arctic in which wood, stone and sod were the main building materials for historic Inuit dwellings (Davis 1880; Freuchen 1961; Giffen 1930; Gulløv 1997; Lund 1916; Mathiassen 1927; Mauss 1979; Nansen 1893; Nelson 1899; Oswalt 1979). Though some ethnographies state that only one sex is responsible for house construction, the reality lies in the actual sexual division of labour leading up to and during construction (Balikci 1970; Birket-Smith 1959; Boas 1888; Giffen 1930). Though different geographic areas require different construction tasks for Inuit males, the primary role of the male is before construction and involves transporting heavy building materials. Inuit women in contrast, are assigned the task of putting together the materials to create a house. Though the roles are different they are not mutually exclusive but essentially interdependent.

Two ethnographies which are of interest concern house construction from areas close to the Hudson Strait (study region).The first account of Labrador Inuit (Hawkes 1916) house construction indicates that even as late as the early 20th century semi-subterranean dwellings were still in use:

> *There still remains at Hebron, Okkak, and Killinek old stone iglus roofed with turf, some of which are inhabitated. These are gloomy little huts, built partly underground... are 10-12 feet across, and the stone walls are 3-4 feet high. The roof slopes to a peak or bowl shape, and is upheld by rough branches or stumps of driftwood obtained from the sea.*

Lucien Turner (1894:228) describes Ungava Bay Inuit abandoned semi-subterranean dwellings. According to Turner, these were no longer used :

> *In former times these people inhabitated permanent winter houses like those used by the Eskimos elsewhere, as is shown by the ruins of sod and stone houses to be seen in various parts of the country. These appear to have had*

walls of stone built up to support the roof timbers, with the interstices filled up with turf or earth. From the depression remaining in the inside of these ruins, the floor seems to have been excavated to a greater or lesser depth. The present inhabitants relate that their ancestors dwelt in these huts...

Though in some parts of the Ungava region during the 20th century the use of semi-subterranean dwellings may have been discontinued, Jugini Irniq (Personal Communication: August 1997), a Wakeham Bay Elder, indicates that these dwellings were still inhabitated well into the early 20th century on southern Hudson Strait.

The above information indicates that building materials were wholly dependent upon the raw materials available in an area. Where wood (the preferred material) was available it was used, and, if it was not, stone was used in its place. Sod and soil used sometimes in conjunction with skins, appear to be the main insulating materials used between wood and/or stone walls, and the main material for roof covering. This last fact is an important one for this study. Thick layers of sod were available and acquired from Dorset middens (Maxwell 1985). Following this assumption, it seems most logical that sod was usually removed from previous habitation areas and used for the construction of a dwelling. The fact that Inuit are known to build on top of old Thule dwellings (Mathiassen 1927:209) may suggest that the Thule were possibly doing the same with abandoned Dorset structures. As indicated below archaeological evidence supports this proposition, which may explain the presence and spatially discrete distribution of Dorset material around Structure 1.

Orientation and Location

Thule and Historic Inuit dwellings were usually orientated towards the sea in a southerly direction. Stupart (1887:103) describes the preference of the Inuit of Stupart Bay (70 km north of Assuukaaq) to place their dwellings near the shore looking in a south/southeast direction (oriented towards the sea).

According to Stefansson (1914), Coronation Gulf Inuit chose a location for a camp depending on the amount of stones available for construction, fuel for the fire or wick for the lamp, and the most strategic place for observing the arrival of caribou and potential enemies.

Boas (1888:134) notes that Central Eskimo dwellings were usually built on a sloping face oriented towards the sea. Similar observations are recorded from archaeologist Mathiassen (1927) and ethnographers Birket Smith (1924) and Freuchen (1961).

The geographic orientation of Thule dwellings is similar to those in ethnographic sources. Dwellings are usually oriented in a southern direction facing, and close to, the shoreline (Barré 1970; Fitzhugh 1994; Mathiassan 1927; Maxwell 1985; McGhee 1984a).

Archaeological Descriptions of Dorset and Thule Dwellings

As artifactual evidence indicates that both Dorset and Thule were present on Assukkaaq Island, an outline of both Dorset and Thule dwelling forms is warranted. The below descriptions of Dorset (Plumet 1985, 1989, 1994) dwelling styles are consistent with those in the southern Hudson Strait.

Early and Middle Dorset dwellings (2400 B. P. - 600 A.D.) are described as rectangular structures built with stone, dirt and skins. Stratigraphic evidence indicates that these dwellings were rarely deeply excavated which suggests that they were built above ground (Maxwell 1985). The internal composition consists of a central mid-passage bordered by stone slabs that separate the house into two equal parts (Linnamae 1975; Maxwell 1984, 1985; McGhee 1996). According to Maxwell (1984), the central mid-passage usually contained a box-shaped hearth that would be used for cooking. Dorset inhabitants would use the side areas for all activities including cooking, sleeping and tool manufacture (Maxwell 1985).

During the Late or 'Terminal' Dorset (A.D. 600-1500 A.D.) period, dwelling styles changed significantly. According to McGhee (1996), dwelling style for this period is not well understood because many of the dwellings were dismantled by later occupants (Thule). Present evidence suggests that Late Dorset dwellings remained rectangular in shape and retained a mid-passage division, but became semi-subterrean in form with sunken paved tunnel entrances, cooking alcoves, paved living floors and elevated rear platforms (Maxwell 1985). In many ways, Late Dorset structures became indistinguishable from Thule houses. The rectangular shape of Dorset structures and the presence of a central mid-passage appear to be two features that persist throughout all periods of Dorset occupation. This period is also distinct because of the appearance of Dorset longhouse structures which are found throughout the Canadian Arctic (McGhee 1996).

A similar modification of winter dwelling style occurs throughout the Thule period (Maxwell 1985; Schledermann 1976; Schledermann and McCullough 1980). Early Thule (A.D. 1000-1300) dwellings such as those found at Brooman Point (McGhee 1984a), Ruin Island (McCullough 1989) and Lake Harbour (Maxwell 1981) appear to be rounded or square in shape, with a short sunken entrance passage, flagstone paved living area with a separate kitchen room located next to the wall or entrance and a rear sleeping platform. Unlike in Brooman Point (McGhee 1984a), however, the rear sleeping platforms found in Ruin Island and Lake Harbour dwellings are not stone supported but consist of a slightly raised sandy floor (Maxwell 1981, 1985; McCullough 1989).

The Classic Thule (A.D.1250/1300-1500) period is marked by a homogenous style of winter dwelling that is a circular or oval shaped semi-subterranean sod, stone and whalebone structure with a paved sunken entrance passage and living area and a rear stone-raised sleeping platform (Fitzhugh 1994; Jordan and Kaplan 1980; Mathiassen 1927; Maxwell 1985; Schledermann 1976). Unlike Classic Thule interior design the sleeping platform of Structure 10 from Staffe Island, Labrador resembles early Thule structures as it lacks any structural support and consists of slightly raised sandy floor (Fitzhugh 1994). Consequently, the lack of stone-supported rear platforms may indicate geographical rather than chronological differences. Schledermann outlines regional changes in southern Greenland, where dwelling styles changed from single round to double round to rectangular-shaped structures (Schledermann 1976).

The Late or Protohistoric Thule period (A.D. 1500-1800) is marked by dramatic changes in dwelling style throughout the Arctic. Large, rectangular communal structures were used in Labrador and southern Greenland (Jordan and Kaplan 1980; Schledermann 1976). In contrast, semi-subterranean dwellings in the High and Central Arctic were abandoned as the snowhouse became the winter dwelling. Only in Hudson Bay, Hudson Strait and Ungava Bay did the use of semi-subterranean winter dwellings persist (Maxwell 1985; Plumet 1989).

Archaeological research indicates the existence of structures that contain both Dorset and Thule architectural features. One such site is from Mill Island, West Hudson Strait (O'Bryan 1953) and is described as an architecturally Thule structure associated primarily with lithic Dorset artifacts. All these artifacts, however, were found outside the structure. Therefore their presence can be explained by the Thule practice of building on top of Dorset structures. The absence of Thule artifacts can be explained by the nature of their construction material which is primarily organic and rarely preserves. Two similar sites are from DIA.4, Diana Bay (Plumet 1979) and KkJf-3, Northwest Hudson Bay (Wenzel 1979). Both sites yielded structures which exhibited characteristics of both Thule and Dorset architectural features. The structure from Diana Bay had a typical Dorset mid-passage feature but also exhibited Thule characteristics such as a flagstone living area with associated kitchen (Plumet 1979). According to Plumet stratigraphic evidence indicates a single occupation that can be dated between 1390 and 1570 A.D.(Plumet 1979). Similarly, House 2 from KkJf-3, northwest Hudson Bay, exhibited Thule characteristics such as an oval shaped semi-subterranean main living room with an associated cold trap entrance (Wenzel 1979). The interior pavement, however, appears more similar to an Dorset axial feature than to typical Thule flagstone flooring (Wenzel 1979). Though O'Bryan (1953), Wenzel

(1979) and Plumet (1979) believe that their respective structures indicate an amalgamation of Dorset and Thule cultures, Park (1993) considers this inter-mixture more a case of Dorset house reuse and differential artifact preservation. It was common practice for Thule people to build on top of or adjacent to pre-existing Dorset dwellings and to use the thick organically rich sod as insulation and roof covering (Collins 1952; Fitzhugh 1994; Maxwell 1981,1985; McGhee 1984a; Park 1993; Taylor and McGhee 1981). Although the presence of Dorset artifacts inside and around Thule dwellings was thought to indicate cultural contact between the two groups (Plumet 1979; Wenzel 1979), some researchers agree that this phenomenon is likely a result of house recycling and poor preservation of Thule artifacts which are, unlike Dorset artifacts, often made of degradable material (bone, wood, antler) (Park 1993).

Spatial patterns inside the dwelling

Information concerning organization and activities occurring inside a dwelling primarily originates from ethnographic and ethnoarchaeological sources. Although archaeological spatial analysis for prehistoric Inuit groups is meagre, the information provided is important in its use for comparative purposes with Structure 1. Ethnographic and archaeological evidence indicates that organization of space was relatively similar among historic Inuit cultures.

Ethnographic Evidence

Ethnographic sources, which are extensive in terms of their description, indicate that historic Inuit interior dwelling organization is very similar to that of Thule dwellings. The living area is accessed by a long cold trap entrance which sometimes houses a small storage alcove. One such storage area found in a Central Eskimo dwelling is described by Boas (1888:133) in which he says : "*On the left side of the entrance of the main building is another small vault (igdluarn) which is accessible from the main building. It serves for keeping spare meat and blubber*".

Stefánsson (1914: 65) also describes an alcove area found in the entrance passage of a Coronation Gulf Inuit dwelling which was used as a storage area for meat and blubber and often had to be closed off when dogs occupied the main entrance. Hawkes (1916) mentions that some Labrador Inuit dwellings have a storehouse built into the end or the side of the entrance passage.

The Inuit dwelling form depends primarily on the construction materials available in an area. Inuit dwellings from Alaska and Greenland, where wood is available, tend to be rectangular in shape, whereas, central and eastern Arctic dwellings, where wood is absent, tend to be circular or oval (Mauss 1979). Directly inside the dwelling, either on the right or left hand side of the entrance, is the kitchen/cooking area where the woman prepares food, cooks (with her cooking pot), and discards leftovers. On either side of the wall extending from the kitchen are benches which are used during the daytime for a place to sit and work . The back of the dwelling, which is raised, serves as the sleeping platform, although it is often used as a bench during the daytime. Closest to the wall next to the sleeping platform is where the lamp is placed where it can be tended from the bed at night. Sketches of the interior organization have been provided (Figures 4.2-4.5) and some descriptions are as follows:

> *The rear half forms the bed, the adjoining parts of the side benches are the place for lamps, while on both sides of the entrance meat and refuse are heaped up.* (Boas 1888:134)

> *Along the back wall rises the low, broad wooden platform, igdleg, which in the day serves as chair and table, in the night a bed...By the side of the main platform is the lamp platform, akeg, where there is room for the lamp and all sorts of little things. A narrow platform, uvkaq or akiusaq, which-as expressed by its name-resembles the lamp platform, is sometimes found along the front wall.* (Birket-Smith 1924:149-150)

Figure 4.2 "An Igloo Seen From Above" (dePoncins 1943:78). dePoncins' illustration of the spatial distribution of domestic activities and their associated materials inside a snowhouse.

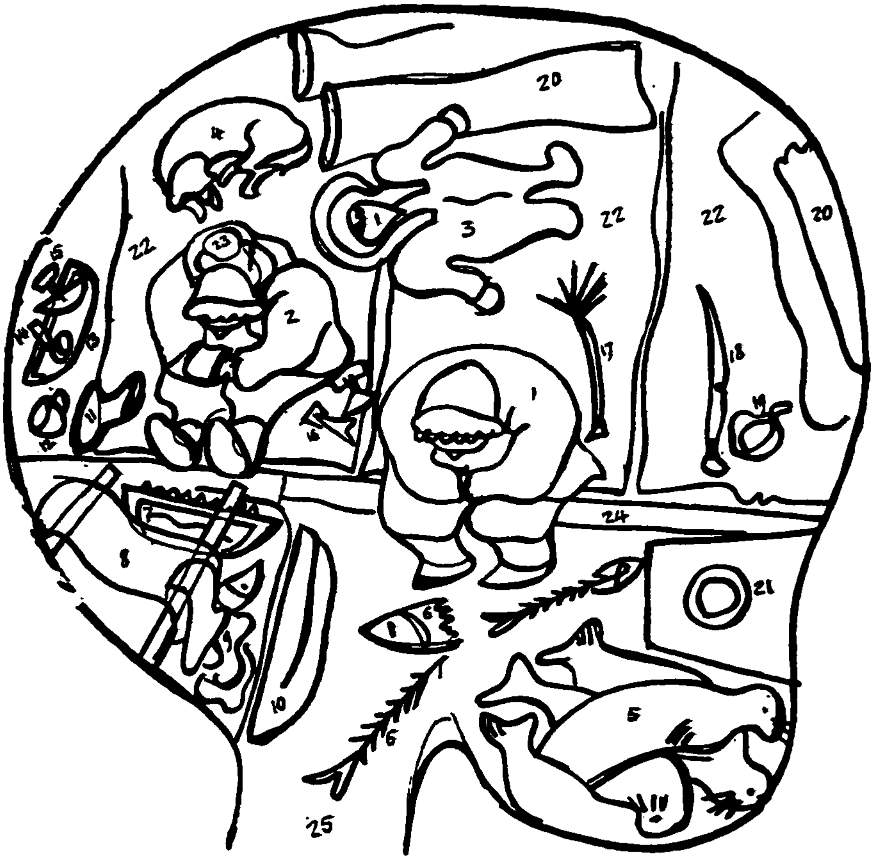


Figure 4.3: Eskimo Snow Hut (Parry 1824)

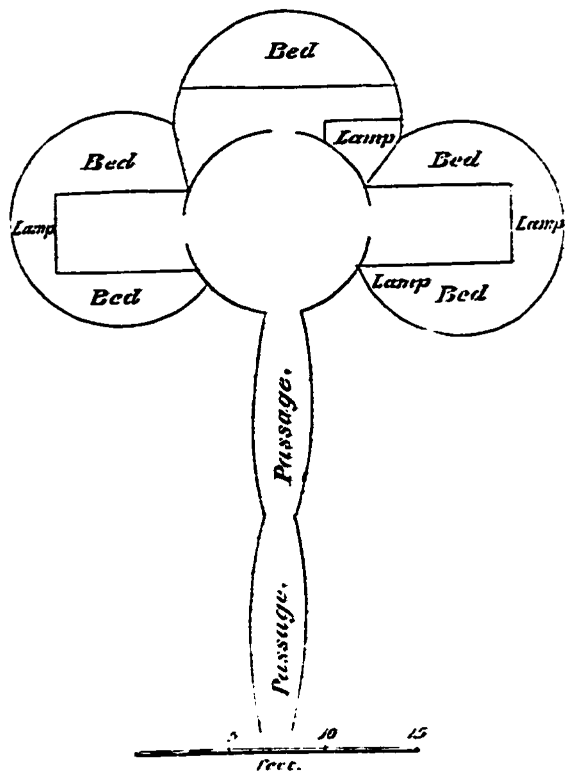


Figure 4.4 Snowhouse illustration from Robert E. Peary (1914) (taken from Oswalt 1979).

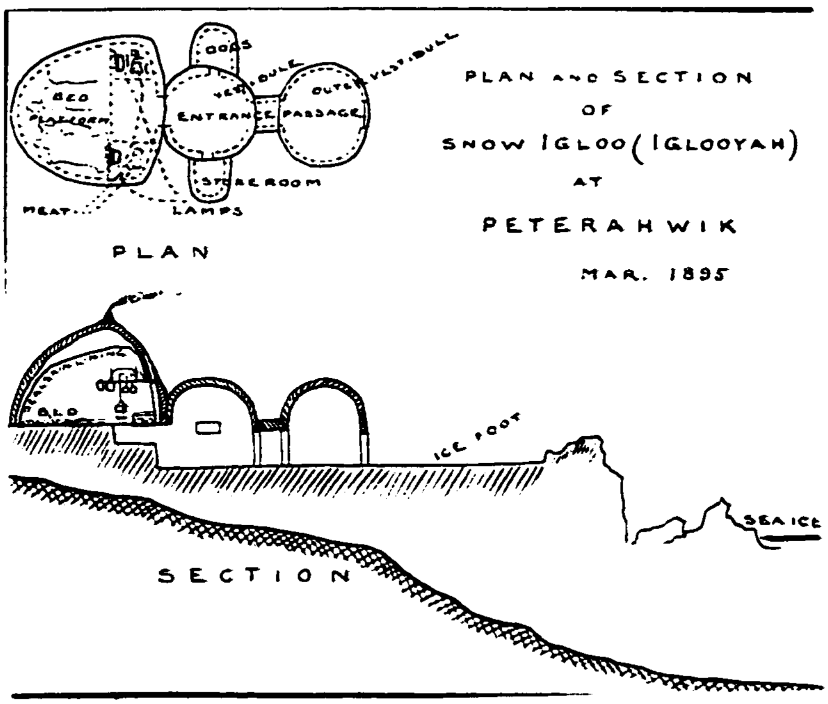
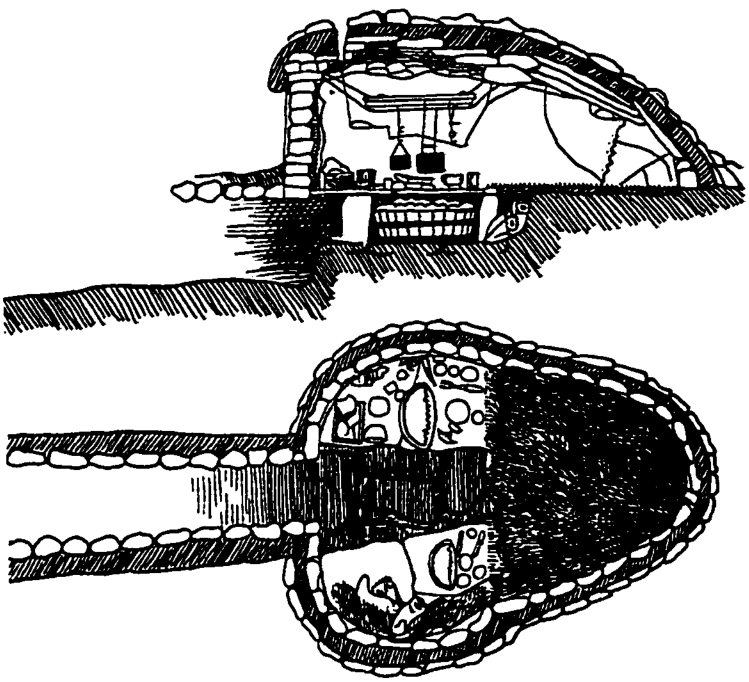


Figure 4.5 Sketch of a semi-subterreanean dwelling by A.B.Moltke (Malaurie 1956)



The interior of the tents may be described in a few words. On one side of the end next to the door is the usual stone lamp resting on any other rough stones, with the ootkooseek or cooking pot suspended over it; and round this are huddled together in great confusion the rest of the woman's utensils... At the inner end of the tent, which is also the broadest, and occupying about one-third of the whole apartment, their skins are laid as a bed... (Parry 1824: 272).

La structure de habitation etait simple. Tentes et iglous comprenaient une platforme sur élévee qui servait de litère et était située dans la partie de l'habitation qui fait face a l'entrée; etait L'ILLIQ. Il y a autre part L'AKI, emplacement oppose a L'ILLIQ et situé dans l'iglou, de part et d'autre de l'entrée (c'est-à-dire deux parties surélevées ou reposaient les lampes a huiles) et dans la tente, d'un coté seulement de l'entrée, ou il servait d'entrepot pour la viande. (Saladin D'Anglure 1967:90)

Ethnoarchaeological Evidence

One of the earliest ethnoarchaeological descriptions of interior Inuit house organization is by Oswalt and Vanstone (1967:90)

On either side of the living room is a log extending the length of the structure. These logs separate the walking and fireplace area from the side wall benches where the residents eat, sleep, work and lounge

Robert R. Janes' (1983) ethnoarchaeological research of the northern Mackenzie Basin Dene indicates that though the interior structure of a house does not possess structural barriers like walls and doors, a mental template does exist which regiments the use of space. According to Janes (1983:46), "*this invisibility of household composition is due in large part to the portability of the associated material culture*". The geographic location (northern latitudes) and settlement and subsistence patterns (hunter/gatherers) make the Mackenzie Basin Dene an appropriate comparison with the Inuit and therefore the above and subsequent noted behaviors are helpful with the interpretation of Structure 1.

Archaeological Evidence

Archaeological evidence indicates that the organization of space within a Thule household is heterogeneous through time and space. Early Thule structures appear to have a separate kitchen area which is attached and accessible to the main living area (e.g., McCullough 1989; Morrison 1999; Schledermann and McCullough 1980; Whitridge 1997). Apart from this, the rest of the structure appears to be similar to the ethnographically described Inuit dwellings consisting of an entrance with associated cold trap, main living room and raised sleeping platform. Classic Thule dwelling organization is comparable to that in the ethnographic record which consists of the 'kitchen' area placed next to the entrance passage on one side of the dwelling and a storage/work area placed on the opposite end (Barré 1970; Jordan and Kaplan 1980; Maxwell 1985; McCartney 1977; McGhee 1984a, 1984b; Morrison 1983; Plumet 1979; Savelle 1984; Schledermann 1975, 1976; Taylor and McGhee 1981; Wenzel 1979).

Gender Divisions and Activity Areas

The evidence presented below indicates that activities and space were both circumscribed by gender. Such information may be predictive when illustrating the relationship between archaeological deposits and their relative spatial distribution.

Ethnographic Evidence

Though the responsibility for house construction is split between men and women, the inside of the house is considered to be the woman's domain (Birket-Smith 1924, 1929, 1959; Boas 1888; de Poncins 1943; Freuchen 1961; Giffen 1930; Park 1998; Parry 1824 [see quote above]). Consequently, women are responsible for organizing space inside the dwelling once it is constructed (Balikci 1970; Birket-Smith 1929, 1959; Freuchen 1961; Giffen 1930; Guemple 1986). It was, therefore, the woman's role to decide how people moved throughout the house and what activities were performed in which areas; symbolically a very important role for the perception and use of space in Inuit society.

During the winter months both sexes spent a great deal of time inside. During the daytime, areas of activities were, however, strongly gender bound. Though the entire household was considered the woman's responsibility, female work 'areas' were usually restricted near the wall and entrance. Lamps were usually placed near the wall at the edge of the sleeping platform, so a woman could tend to her lamp from bed (Balikci 1970; Birket-Smith 1929, 1945; Freuchen 1961; Giffen 1930; Saladin D'Anglure 1967; Figures 4.2-4.5). The cooking area was usually placed on one side of the entrance above which hung a drying rack for clothes. The other side of the entrance served as an all-round storage facility for meat, cooking implements and knives (Balikci 1970; dePoncins 1943; Freuchen 1961; Nelson 1899; Saladin D'Anglure 1967; Figures 4.2-4.5). The woman was in charge of cooking and dispensing meals, in addition to 'female' tasks such as hide preparation and sewing, which were all done in the confines of this area. The middle and back area of the dwelling, consisting predominantly of the sleeping platform, was utilized by men. This area was where men maintained and manufactured tools and where other men would come to socialize (Balikci 1970; Birket-Smith 1929, 1945; Freuchen 1961; Giffen 1930; Saladin D'Anglure 1967). This is illustrated by Boas (1888:156) who says, *"The men visit one another and spend the night in talking, singing, gambling and telling stories.."*.

Birket Smith (1929:93) describes this gender division in his account of Caribou Eskimo daily life:

> *Both day and night the woman's place is by the wall, where they can tend the fire of the kitchen or the lamp, whereas the man or men, sleep nearer the middle of the house.*

During the night time the sleeping platform, occupied by all the family, is used for sleeping and eating. This is illustrated by Peter Freuchen's (1961:43) description of Inuit habits:

> *...One of them [side platforms] may be used to place a piece of meat or game on for everybody to nibble on [from bed].*

Ethnoarchaeological Evidence

Graham et al. (1982) state that all ethnographic and archaeological sources indicate that during the winter the majority of Nunamiut (and other Inuit groups) activities were performed inside the house. Consequently, it is critical to understand the use of distinct spatial areas and the way in which these areas are perceived by the people who use them.

According to Oswalt and Vanstone (1967) Crow Village dwellings were primarily occupied by women and young children. A separate structure, the karigi, or men's house, was occupied by mature males.

Janes (1983:60) states that because of the lack of architecturally defined space, Mackenzie Dene dwellings are better thought of as "generalized activity centers rather than clusters of spatially distinct and mutually exclusive activity areas". Household residents, male and female and young and old, occupy this space freely; however, males, unlike females, have no special 'work' area and are usually confined to the sleeping area of the dwelling. Janes' (1983:61) research indicates a high amount of inter-household variability when it comes to distinct activity areas. He found that no one 'rule' could be produced when it came to using a specific area of the house for specific tasks. According to him, different activities were performed in the same area through time, and this area varied between households. In addition, though Dene gender ideology is strongly divided when it comes to space, men and women were found to use the same space for different tasks. Spatial use is, therefore, not monofunctional or homogenous. This indicates the need for specific household analysis when it comes to understanding spatial use within a culture.

Binford's (1978) seminal study of the Nunamiut Inuit group indicates that faunal debris is associated with different forms of consumption, types of preparation and season. According to Binford, meat is prepared (by females of the household) using the cutting board of the dwelling found next to the entrance. His research indicates that caribou units such as legs, feet and heads are butchered into manageable units (eatable units) and those elements which can be further processed for marrow are splintered and then placed in a marrow bucket on the other side of the entrance. All this is done in the confines of the living area of the household, considered 'woman's space' (Binford 1978). Binford (1983:163) indicates that Nunamiut beds are not exclusively used for sleeping but are often used for 'work areas' and 'eating areas' for men. According to him (Binford 1983:163): *"I have often observed men in hunting camps make beds which are in a sense symbolic. since they are not used at all for sleeping, but simply as a place where one can repair tools in peace and quiet or just by oneself"*. It is obvious the sleeping platform, in any Inuit dwelling, can be considered a 'male' area where men would work. eat and talk among one another while females worked in their area. the middle/or paved portion of the dwelling. As food is regularly brought to bed, by both men and women, for late night meals, a small midden or deposit of waste can be found collected in front of and on the sleeping platform.

Archaeological Evidence

The practice in archaeology is to equate tools with gender, and consequently the areas where women's tools and men's tool are collected are automatically considered 'women's' space and 'men's' space respectively. In Thule archaeology, this is compounded by the use of ethnographic analogy, which assumes that because women's tools are collected in ethnographically recorded 'women's' areas they were used by women. As indicated by many ethnoarchaeological studies (Janes 1983; Kent 1984, 1987; Tringham 1991) this is not always the case.

Archaeological material remains within general areas of the household, however, can provide some information of the activities performed inside spatially defined areas. Faunal remains in areas defined as entrance passages yield assemblages indicating that the passages were indeed used as some type of storage facility. In addition, evidence such as charcoal and grease remains indicate that it was perhaps used as a waste area or as a supplementary area for a hearth or lamp. Artifacts (cooking pot, sewing materials, and 'kitchen' gear), faunal remains and charcoal/grease deposits, support ethnographic data, which indicates that cooking, food preparation and other 'domestic' activities were performed at the front of the house on either side of the entrance passage (e.g. Mathiassen 1927; Maxwell 1985; McCartney 1977; McCullough 1989; McGhee 1984a; Morrison 1983). Materials associated with tool manufacture are usually found further inside the living area and around the sleeping platform, which again supports ethnographic data, but should be cautiously assigned to a specific gender. Clustered faunal debris in front of the sleeping platform indicates that nighttime eating was also practiced during prehistoric times.

Maintenance and Cleaning

The evidence below indicates that certain areas of historic Inuit and Thule dwellings were cleaned and maintained regularly and predictively. This information can, therefore, provide a better understanding of the processes responsible for producing and depositing household garbage.

Ethnographic Evidence

Though ethnographies portray Inuit dwellings as dirty and unclean (Boas 1888; Hawkes 1916; Nansen 1893: Stefansson 1914; Turner 1894) maintenance and cleaning was practiced inside winter dwellings. Mathiassen (1928:130) states that "*bones and other refuse are collected behind the lamp or in a corner in the floor and are thrown to the dogs at certain intervals...*"

Stefansson's (1914:230) observations of Victoria Island Inuit maintenance behavior are similar:

When this[sideboard in front of lamp] gets pretty well littered it is scraped clean, the litter being pushed over the back edge of it and falling in a pile about under the lamp. This is periodically gathered up for dog feed.

These accounts indicate that debris scattered around the living consisting of bones and refuse, are placed in unoccupied corners of the dwelling, behind the lamp or under the storage area, and are periodically taken out and fed to the dogs (Boas 1888:156; Jenness 1991). Birket-Smith's (1924:150) photograph and caption, however, is one of the few descriptions of the presence of a distinct refuse heap. In addition, when a house became overladen with debris, a new dwelling was sometimes constructed and the old dirty one abandoned (Boas 1888; Freuchen 1961; Saladin D'Anglure 1967; Turner 1894).

Ethnoarchaeological Evidence

According to Schiffer (1972; 1987), preventative maintenance is the disposal of items away from intensively used space and therefore involves anticipation of the amount of debris that will be collected in a specific area, which affects the placement of activities in the first place.

Binford notes the extensive maintenance performed by female Nunamiut in which they separate materials from domestic activities (1978:146) :

One thing that strikes a visitor to traditional Nunamiut winter house is the number of containers in the house-some hold marrow bones, some hold thawing meat, some hold remains of previous stews, some hold marrow bone splinters, some hold articulator ends, and all of these containers are seemingly undifferentiated from the "slop buckets" containing urine and feces and buckets of ashes from the hearths. All these containers are seemingly waiting either to be dumped or to be emptied of their contents.

Binford's study of faunal debris around Nunamiut hearths indicates the presence of a *drop zone*, which is small faunal debris (considered too small to be in the way) found close to the hearth and usually in situ. A *toss zone*, in contrast, is comprised of larger bones that are thrown some distances from the hearth (because they are considered 'bulky' and in the way). Binford's (1983:177) investigation inside a traditional Nunamiut winter house (Palangana's House) indicates the presence of a *drop zone* and an absence of a *toss zone*. According to Binford " *The presence of a drop zone composed of debris biased toward the smallest bone splinters indicates the regular cleaning of the area took place; this size bias, coupled with the existence of a large outside door dump, further illustrates the tidying up of the intensively used space around the hearth...* ". The absence of a *toss zone* is also part of the 'preventative maintenance' which indicates that large bones were disposed of following consumption.

Archaeological Evidence

The amount of faunal material found inside Thule structures indicates that some amount of discard took place within the dwellings (Kaplan 1980; McCartney 1977; McCullough 1989; McGhee 1984a; Rick 1980; Staab 1979; Stenton and Park 1994). This again supports ethnographic and ethnoarchaeological evidence that although maintenance was practised, some areas were designated 'debris' areas usually positioned on one side of the entrance in the dwelling. As will be discussed further, abandonment is also a crucial factor when understanding the amount and type of debris left inside a house.

Though some areas inside Thule dwellings are found littered with debris, other areas are usually devoid of any debris, which indicates that consistent maintenance was practised. These areas, again in correlation with ethnographic and ethnoarchaeological evidence, consist of the sleeping platform and living area (flagstone floor) (McCullough 1989; McGhee 1984a; Stenton and Park 1994).

Meaning of House

Ethnographic Evidence

As the information above illustrates women are considered *the* keepers of the household. They are responsible for the creation, organization and maintenance of a household. It is no wonder, therefore, that the house is considered 'symbolically' tied to women. It has also been illustrated that Inuit people feel that it is women who mediate the relationships between humans and animals (Bodenhorn 1990:62). Consequently, women, animals and house are cultural aspects inextricably tied to one another. This is illustrated in the classic legend of "The Soul of the Whale and the Burning Heart" told by Rasmussen (1931:24-26) in which the Raven flies too far out to sea and falls into the belly of a whale, which he mistakes for a dwelling and finds a girl tending her lamp "...the raven had just made up its mind that it was to die when it tumbled right into the house, a beautiful, lovely house, where there was light and warmth. On the platform sat a young woman busy burning her lamp...The girl was the soul of the whale, and she slipped through the door every time the whale had to breathe; and her heart was a lamp with a large, steady flame..". This indicates that one metaphor for the house in Inuit legend is the body of a whale. Archaeologically, this is illustrated by the importance of whale bone in Thule house construction (see above). The young woman, who is considered the soul of the whale, is seen as the soul of the Inuit house. Finally, the woman's heart is represented by the oil lamp, which is considered the 'core' of an Inuit household and therefore symbolically its 'heart'. Throughout the Arctic, Inuit women are considered part of and tied to nature, and as they spend most of their time inside the house, dwellings are considered extensions of women (Balikci 1970; Birket-Smith 1929; Boas 1888; Bodenhorn 1990).

Archaeological Evidence

Peter Whitridge (1997) postulates that archaeological evidence indicates that early Thule dwellings held symbolic meaning for their inhabitants. The presence of a separate kitchen is, according to Whitridge, an indication of women's low status in early Thule society. This follows from the view that the effect of creating a separate kitchen hides women's work from view, thereby "literally and symbolically concealing women's labour" (Whitridge 1997:4-5). According to Whitridge (1997:3) "within Thule conceptual space an elevated area at the rear is reserved for bodies at rest, whether sleeping or dead, high status or sacred" and as males ethnographically occupy this space during the day, it is considered evidence for their high status within society. Elevation is, therefore, directly correlated with societal status. The intermediate elevation consisting of the living floor is reserved for daily activities usually used by women and children. The lowest status area, consisting of the entrance passage, is a place for the storage of animal products. Consequently, the separate kitchen found at an intermediate level illustrates the low position of women in early Thule society, as they were segregated and relegated to a lower status elevation.

Ethnographic evidence, however, does not support Whitridge's view of women's status in society. Ethnographies indicate that it was considered a woman's duty to organize space and that the living floor was 'her' space and that men would go where they could to work and usually ended up on the sleeping platform out of necessity. In addition, the fact that Thule men supposedly spent most of their time in the karigi (men's house) would indicate that the dwelling was basically under the control of females, and therefore, the idea of separate kitchen equals lower status does not provide a strong argument for women's inferior status. Schledermann (Personal Communication) suggests that the presence of a separate kitchen possibly had more to do with problems of smoke inhalation than with women's status, as wood or willow was used as fuel and would create a great deal of smoke.

Debris Areas Outside the Dwelling

Though spatially distinct areas outside the house are in many ways directly affected by activities occurring inside the house, the area surrounding it is considered by many independent (Newell 1987). Debris areas are occasionally found within certain parts of a house, however, the majority of debris areas or middens are found outside the house (Batram et al. 1991; Binford 1978; Newell 1987; Schiffer 1972).

Ethnographic Evidence

Few ethnographies describe where the debris was placed after it was taken outside. Birket-Smith's (1924) ethnography from the Egedesminde District includes a photograph (Figure 4.6) of an Inuit dwelling with the caption *"Old type winter house with refuse heap in front of the house"*. This photograph is the only piece of evidence that clearly distinguishes a 'debris area' from the rest of the outside space.

Ethnoarchaeological Evidence

Since ethnoarchaeology is devoted to testing archaeological hypotheses, debris areas are of particular interest. As indicated from the information presented below, proximity of the midden is wholly dependent on the geographic locale of a site (close to water) and season of occupation.

Oswalt and Vanstone (1967) indicate that middens in Crow Village, Alaska are not present in dwellings found near the river as debris was thrown into the water. However, dwellings which were situated farthest away from the river possessed debris areas, which were usually shared between two households and placed in between the two structures.

The Mackenzie Basin Dene (Janes 1983) are described as using a communal refuse pit and an individual household refuse pit simultaneously. The communal debris area is found on a unnamed island some distance from the site. The individual refuse pits are placed in the front of the dwelling; however, Janes notes that some household debris was also deposited in the bush around the community so that refuse heaps in front of the dwellings did not become too large. Though these debris areas could provide information about activities occurring in the community it would offer very little information about where these activities were occurring and consequently, spatial analysis would be relatively futile (Janes 1983:34).

Cross-cultural comparison indicates similar spatially distinct discard areas presented in Yellen's (1977) study of the !Kung San. According to Yellen, discarded faunal material is located in three areas of a !Kung community, near the hut opening next to the hearth, in and adjacent to the bushes, and near the wind breaks, which are on the side and in back of the hut wall. Refuse areas are always found near the camps periphery, and if this refuse pile becomes too large, people simply move. According to Batram et al.(1991:106) Yellen's study indicates that " all types of camps [!Kung] primary bone discard occurred in or adjacent to both butchery and consumption areas".

Binford's(1978:146) description of Nunamiut winter house refuse areas is particularly interesting for understanding decision processes occurring during disposal:

> *Outside every winter house are dump areas. These are surpassingly differentiated. Urine, feces and ashes are generally dumped in one place. Marrow bone splinters, accumulated from consumption inside the house are generally dumped discretely. General garbage, slivers of skin removed during meat processing, chunks of cartilage, fragments of antler discarded during tool manufacture, bones boiled in stews, remains of heads, and so forth are generally dumped in still another location. This segregation of dumping areas around a winter house is not without utility. Old Eskimos, recalling earlier times, will tell of families running low on food at the end of the winter and being reduced to recovering bones and frozen animal parts from their dumps, processing them again.*

It is obviously the role of women to separate these garbage dumps as they occur from household activities. Binford (1978:146) notes " *older women will frequently speak disparagingly of younger women or daughters-in-law by saying they are so stupid that they dump urine and marrow splinters together*". In addition, Nunamiut dumps are divided by gender. 'Women's bones', which consist of the axial skeleton of the caribou are disposed of in the 'women's bone dump'.

Graham et al. (1982) indicate that the proximity of Nunamiut trash dumps to the dwellings, using Binford's Palangana and Bear sites as case studies, is dependent upon the season of occupation. The two sites, occupied during the winter, had refuse dumps close to the entrance of the dwelling. Sites occupied during the warm season, however, tend to have refuse dumps farther away from the dwelling. According to the authors (Graham et al. 1982) difference in proximity is due to ergonomic factors such as: (1) smell in the winter frozen meat does not smell unlike in the summer when carcasses produce a pungent odor; (2) the debris can be covered quickly with snow during the winter but is difficult to cover during the warm season; (3) during winter months, the proximity is convenient, during warmer months this convenience is not necessary. Graham et al (1982:116) proceed to compare refuse spatial patterns in cultures with similar conditions and concluded " *that while sites of all seasons show small outside dumps, only the winter sites develop large elongated dump areas around the side or to the front of the house*".

Archaeological Evidence

Typical middens or refuse areas found in winter Thule sites consist of faunal material, grease and charcoal, broken or unusable artifacts (e.g. broken stone lamps) and expedient tools (McGhee 1984; Newell 1987; Stenton and Park 1994; Vanstone 1970). Though most middens are found in front of or on the side of the entrance (Mathiassen 1927; McGhee 1984; Stenton and Park 1994), Morrison (1983) has distinguished these middens from 'wall middens' consisting of debris placed on the outside against the wall of the dwelling. Similar 'wall middens' were recorded early in Thule archaeology by Mathiassen (1927). The size of middens, measured by their thickness, varies among and between sites (Stenton and Park 1994). In addition, the problem noted by Janes (1983), of shared refuse areas between dwellings, also occurs among Thule sites and makes it difficult, at times, to assign refuse, and to correlate subsistence activities with an individual dwelling.

Activity Areas Outside the Dwelling

Ethnographic Evidence

Marcel Mauss (1979:40), the pioneering sociologist of spatial studies (see Chapter 2), described the outside of an Angmagssalik winter dwelling by saying *"In front of the house are storage places for provisions such as frozen meat, props for boats and, sometimes, a kennel for the dogs"*

Parry (1824) describes the presence of a canoe rest, near one of the abandoned "old Esquimaux habitations" possibly a Thule structure, which was constructed of stones.

Ethnoarchaeological Evidence

Binford (1978:429) describes the four main components of a typical Nunamiut winter residential location, based on the Bear site occupied by the Kakinya, as (1) the house area; (2) the winter meat rack with associated cache of bones set aside; (3) a small dump and (4) an extensive dog yard. Within the outside space specialized activity areas are delineated consisting of the household midden, a splinter dump, dog yard, wood pile, work space and human waste disposal (Binford 1983:147). According to Binford (1983:184) generalizations emerge outside an Inuit dwelling:

> *We can clearly see a core area in this case the house interior, which was intensively used and internally partitioned in a very fine grained manner. Immediately adjacent to it are areas more grossly differentiated in spatial terms, areas given over to activities which individually occupy a considerable amount of space: the storage racks and platforms, plus the door dump. Moving still further away from this, we observe the largest and functionally most specialized areas; the dog tethers and the stone boiling hearth.*

Newell's (1987) description of a Iñupiat community is much more extensive than Binford's as he distinguishes among certain activity areas that are delineated by seven specific partitions of space. These seven areas include the scaffold rack area, midden area, umiaq rack area, bone pile area, wood yard area, northwest activity area and peripheral area (Newell 1987).

In Mackenzie Basin Dene communities, dog yards are also part of the outside space (Janes 1983). Janes noted that this area was distinguished by its tightly compacted ground and small concentrations of butchered and unbutchered bone. Only a portion of the assemblage exhibited gnaw marks, which indicates that the gnaw mark criterion is not always a reliable indicator for the presence or absence of domestic dogs. This latter phenomenon may explain the lack of gnaw marks and the presence of domestic dog bones in the faunal assemblage in Structure 1 at JhEv-3.

Archaeological Evidence

The recorded amount of differentiation outside Thule archaeological dwellings is not as comprehensive as with ethnoarchaeological sites, although this is probably due to smearing and obliteration caused by abandonment and post-abandonment disturbances. In addition, until recently, the only portion of a Thule site which was excavated was the dwelling itself and a limited part of the surrounding area, usually encompassing part of the midden. Therefore, the lack of information also stems from the method of excavation.

McCartney and Savelle (1985) have recorded the presence of large meat caches located close to individual dwellings. The problem, however, as pointed out by Park (1997), is that meat caches could have been used by many individuals over an extended period of time, and therefore, they are not indicators of individual ownership or period of use.

Agents of Spatial Manipulation

Dogs are considered to be agents of spatial manipulation, in that they can disturb culturally deposited material and redistribute it, thereby creating false perceptions of primary disposal areas (Batram et al. 1991; Binford 1978; Janes 1983). In addition, dog yards are themselves spatially distinct areas, as dogs themselves are considered agents of 'trash disposal' (Binford 1978; Janes 1983). Janes' (1983:21) research also indicates that children can be agents of spatial manipulation, a fact rarely considered. According to Janes, Dene children of the Willow Lake community scatter material around the community and "are inadvertent agents in the random distribution of materials throughout the community".

Abandonment

Information concerning abandonment behavior provides clues as to why some materials are absent and why others are present in certain areas.

Types of abandonment behavior

M.G. Stevenson (1982) provides an important case study in understanding deposited material and its behavioral correlates for different types of abandonment. Stevenson uses gold-mining communities from the early 20th century that have been documented with respect to their mode of abandonment. The author differentiates between planned and unplanned abandonment, and between final abandonment and intended return abandonment. Sites (case study:Mush Creek) that experienced planned abandonment usually consist of few artifacts and features found in the process of manufacture, use or maintenance because work/activities slow down in anticipation of abandonment. In addition, these types of sites appear to produce a clustered arrangement of refuse in areas away from places not used during daily activities and consequently result in a spatially discrete refuse area. In contrast, sites abandoned (case study: Bullion Creek) in an unplanned manner, are typified by a high frequency of artifacts and features in the process of manufacture, use and maintenance. Refuse areas at this type of site are usually found within the enclosed living area and tend to be less abundant, and hence less clustered, than those found at sites where abandonment was planned.

Sites that undergo planned abandonment with anticipated return (or seasonal) are typified by a caching of materials some distance from the activity area where they were used. Sites that undergo unplanned abandonment with anticipated return are also typified by cached materials; however, the caches are usually found close to the areas where they were used. Caches from both types of sites consist of 'prized' materials which would not have been left if the occupants did not intend to return.

Planned final abandonment, though the author does not have evidence from his case studies, are hypothesized to have a large amount of refuse found in concentrated areas inside the enclosed living area. Though the area of discard is similar between both forms of unplanned abandonment, materials found at planned final abandonment sites are hypothesized to consist of less personal and highly curated or 'prized' items.

Abandonment and Post-Abandonment Behavior

Ethnographic

The earliest account of abandonment behavior is by Lauren Feykes Haan (Cited in Gulløv 1997) who describes abandonment by Greenlandic Inuit in the summer of 1720. Haan states that *"..they leave their houses, whose roof they largely break down or demolish, in order to take the wood with them to use in another way"*.

Haan appears to be describing final abandonment, as all structural materials of use are removed. However, one can not assume that the described Inuit removed this material for purposes other than construction as Hann (Gullov 1997) states. The fact that wood is such a prized material in the Arctic may require the removal of wood during seasonal and final abandonment. This fact would perhaps account for the lack of wood in many Thule dwellings, where the structural apparatus would necessitate its use.

This line of argument is strengthened by Freuchen's (1961:40) statement on the Polar Eskimo:

> *"Most of the winter they live in permanent winter houses made of stones and peat. Permanent, that is, for the winter for each spring they are left by the inhabitants and automatically become public property next fall"*

This statement indicates that everything left behind is for the taking and consequently all prized material, such as driftwood, is taken during abandonment, final or otherwise.

<u>Ethnoarchaeology</u>

Ethnoarchaeological evidence from Alaska (Oswalt and Vanstone 1967:11) indicates the reason for wood removal during abandonment. They state: *"In each house there was clear evidence that some of the construction timbers had been removed prior to the collapse of the dwelling"*. The authors also indicate that log pilfering was a common occurrence in the Inuit community of Crow Village.

The Mackenzie Basin Dene (Janes 1983) are recorded as using old abandoned households as trash dumps. This process will inadvertently add material which is not associated with the dwelling during the time of occupation and produce a 'smearing' between archaeological material.

<u>Archaeological</u>

Stenton and Park (1994:413) indicate that seasonal and final abandonment can be distinguished for Thule winter dwellings. The authors make an important point when stating that abandonment type only refers to the "intention of the house's occupants at the time of abandonment" and that plans change throughout the year, and consequently, seasonally abandoned dwellings are not necessarily always reoccupied. They also indicate that faunal debris left on house floors should not be viewed as the complete picture of subsistence, but, may indicate the final diet of Thule inhabitants prior to abandonment, as it was unlikely that cleaning was practiced immediately prior to abandonment, assuming that planned abandonment has occurred.

Summary

In this chapter information concerning ethnographic, ethnoarchaeological and archaeological spatial behavior has been presented. Archaeological evidence indicates a chronological progression and regional variation of Dorset and Thule dwelling styles.

Thule dwellings were circular, oval or rectangular in shape and consisted of a cold trap entrance passage sometimes containing an associated alcove. Interior living space consisted of a paved section rectangular in shape, containing the kitchen, storage and debris area. This area is ethnographically designated as the female work area. The back of the house consisted of a raised sleeping platform, which is used in the day by men as a work area and used at night by the whole family as a sleep area.

Symbolically the Inuit winter dwelling is thought to represent both female and animal aspects of Inuit culture. According to Bodenhorn (1990, 1993), this symbolism is tied to the idea that Inuit women are somehow connected to the animal world, and because they spend most of their time in the home, the result is a symbolic connection between woman, animal and house.

Though ethnographies allude to the 'dirtiness' of Inuit dwellings, these structures were maintained and cleaned on a regular basis. Household maintenance was performed by gathering up debris and placing it near the door and periodically throwing it into dump areas and feeding it to the dogs. The outside area, usually positioned at the front or on the side of the dwelling, is separated into dump areas, a dog yard and generalized activity areas. These generalized activity areas consisted of caches, canoe stands, umiaq stands, and storage areas. Arctic archaeology, as noted above, however, rarely excavates an adequate area outside the dwelling and consequently, very little of outside structural information is collected (Newell 1987).

Information concerning agents of spatial manipulation based primarily on Janes'(1983) work on the Mackenzie Basin Dene indicates that dogs and children can skew and even produce their own spatially distinct clusters. This phenomenon is an important one when trying to interpret the most likely agent(s) of spatial manipulation which may have had a role in the creation of spatially distinct areas in a site.

Abandonment behavior is another agent which may alter or create a spatially distinct area. Sites may represent planned or unplanned abandonment which can be either final or seasonal. Planned and unplanned abandoned sites are typified by observably distinct assemblage types discussed above. These site types can be either abandoned seasonally or finally which may result in certain spatially distinct clusters of material. In addition, post-abandonment behavior, such as pilfering, which results in distinct assemblage types may indicate why some materials are present or absent in certain areas of a site.

All of the information outlined above provides examples of behavior and associated spatial correlates which will be used to guide and to illuminate the interpretation of Structure 1 at JhEv-3.

Chapter 5: Results

Method of Excavation and Recording

Structure 1 was mapped and a metric quadrant system was established using a theodolite. A 8x6m area was delineated for excavation and was divided into four quadrants. These four quadrants consisted of East-West and North-South lines with a (0,0) position in the center of the dwelling. An elevation was taken at the edge of each wall (Figure 5.1) and at a balk positioned in the southwest quadrant (P1-P5). Elevations (meters above sea level or m asl) were taken for all archaeological materials recovered and individual positions were recorded on 1:20 cm graph paper. All rocks were mapped and photographed at 20 cm intervals. Only those rocks which were completely visible were recorded and those partially visible were recorded as dotted lines and later positioned on a layer when they were completely uncovered. All rocks that appeared to be of structural significance were left undisturbed and are illustrated on Figure 5.2. A total of eight rock layers were uncovered (Appendix: Figures A1-A8). Stratigraphic profiles were also recorded on 1:20 cm graph paper.

Stratigraphic Information

Stratigraphic profiles were recorded along the walls of the four excavated quadrants and on the living area of the house. Three layers were detected: a sod layer, a sand layer and an organic layer.

The sod layer was between 7-12 cm in depth starting at ground level. Coverage consisted of moss, grasses and low-lying shrubs. Gun shells were the only artifacts found in this layer.

Figure 5.1: Elevations

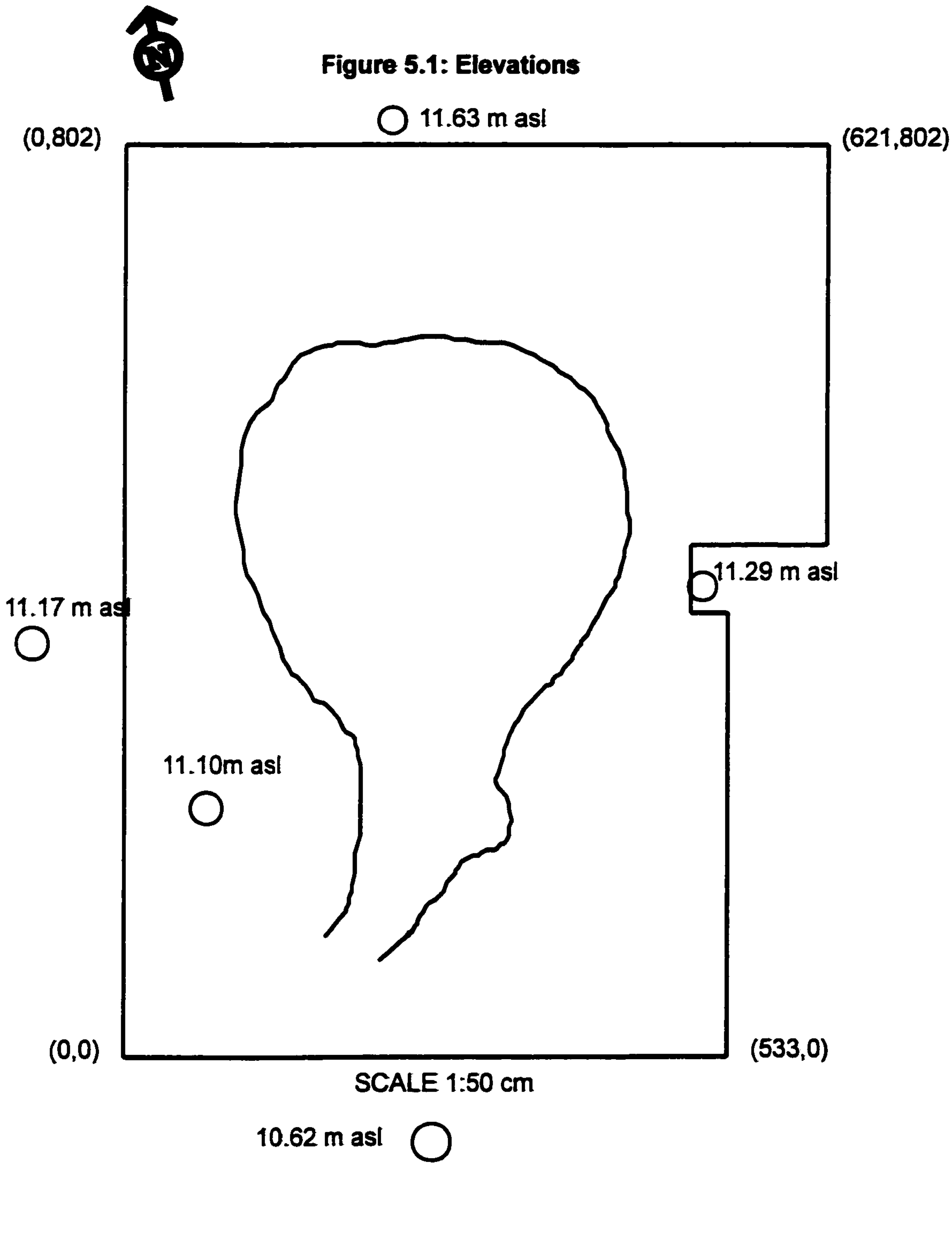
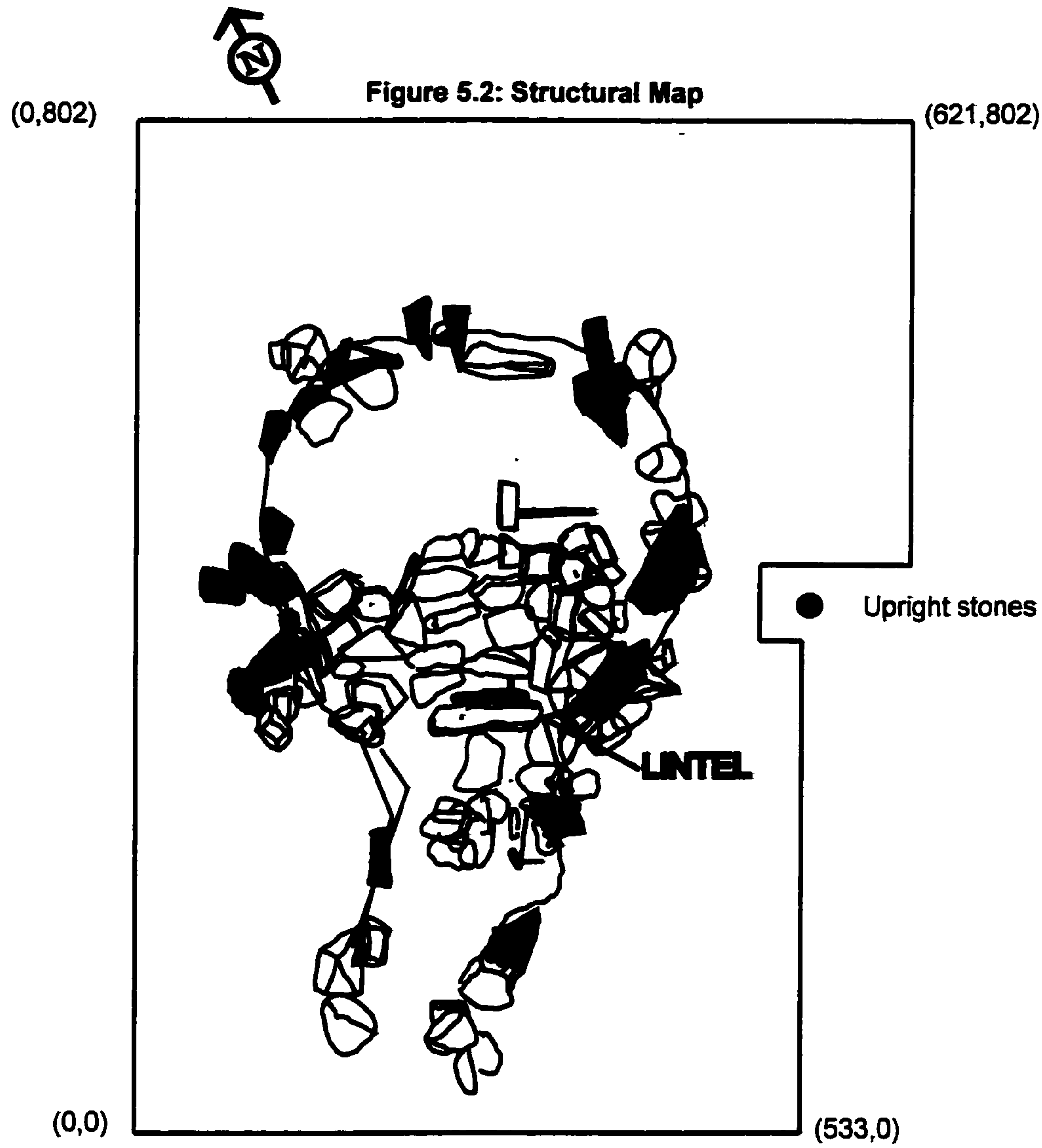


Figure 5.2: Structural Map



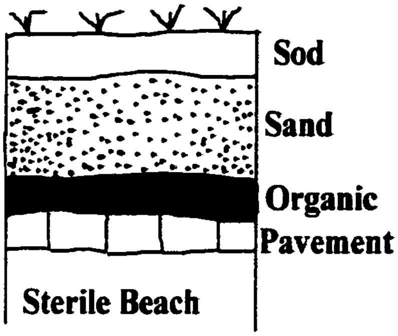
SCALE 1:50 CM

The sand layer, which was thickest in the northern wall, varied between 10-60 cm in depth throughout the excavated area. This layer which consisted of a small silt component, had a Munsell color of 5YR 5/1(gray), and contained fine, medium and coarse grains combined with small pebbles scattered throughout the matrix. A small number of woody fibers and small rootlets occurred throughout the layer. The coarse grains may have originated from inside the house, as it was constructed on top of a beach layer. The finer grains may indicate an origin through aeolian transportation. The pH reading from this layer, which was attained from a 1:2 soil and distilled water solution, was 4.33. Small amounts of lithic artifacts and debitage were present.

The organic layer, which was thickest in the southeastern portion of the excavated area, was between 5-10 cm in thickness. The Munsell color is 10YR 4/1 dark gray. This layer was an organically enriched silty sand with the same grain composition as the sandy layer. Woody fibers and rootlets appeared throughout this layer. The silt component was significantly larger than the previous layer. The organic composition appeared to be in an advanced state of decomposition. A pH reading, from the same 1:2 ratio solution, was between 5.03 to 5.38. Most cultural material (i.e.bone, bone stains, grease, charcoal, artifacts and lithic debitage) was present in this layer.

The total fill inside the dwelling was 70 cm. Stratigraphic layers were recorded, but profiles were not taken (Figure 5.3). The sod layer was approximately 15 cm thick and was therefore thicker than the average sod layers surrounding the house. The sand layer was measured between 35 and 40 cm. The organic layer, which was a dense, dark and organically rich material, was approximately 13 cm in thickness. The flagstone pavement was found beneath the rich organic layer. The layer under the pavement consisted of a sterile beach matrix.

Figure 5.3: House Stratigraphy



The North wall (Figure 5.4; Note: All Stratigraphic profiles were drawn by Karen Ryan, Department of Anthropology, McMaster University), which had a total depth of 75 cm, was dominated by a sandy layer with a thin interspersed organic layer. This was primarily due to the sloping terrain and the construction of the semi-subterranean dwelling, which resulted in deep excavation of this area in order to construct the house walls. Two organic layers on the eastern extent of the wall may indicate the existence of a previous occupation in this area. Though structural material does not account for this occupation, the lowest organic layer may indicate the presence of a Dorset occupation and the subsequent layer being associated with a Thule occupation.

The South wall (Figure 5.5), which had a maximum thickness of 30 cm, was composed of a continuous dark organic layer with an average thickness of 12 cm. The sod and sand layers were relatively thin with an average depth of 8 and 9 cm.

The East wall (Figure 5.6) began with a depth of 70 cm in the northern portion and terminated with a thickness of 30 cm at the most southerly extent of the excavated area. The first 2 m of the wall had two organic layers which may suggest the presence of two distinct occupations. At 2 m, however, the lowest organic layer terminated and the remainder of the wall was composed of one single organic layer. The organic layer increasingly became thicker (10 cm) and darker in the last meter of the eastern wall. Based on the appearance of a dense organic layer, coupled with the presence of large amounts of bone, bone stain and broken soapstone pots, this portion of the wall appeared to indicate the presence of a midden.

The West wall (Figure 5.7) ranged between 12 and 35 cm in thickness and was comprised of a small organic layer which extended 1.4 m from the south. The remainder of the wall lacked any organic layer and was represented by sod and sand layers.

Figure 5.4: Northwall

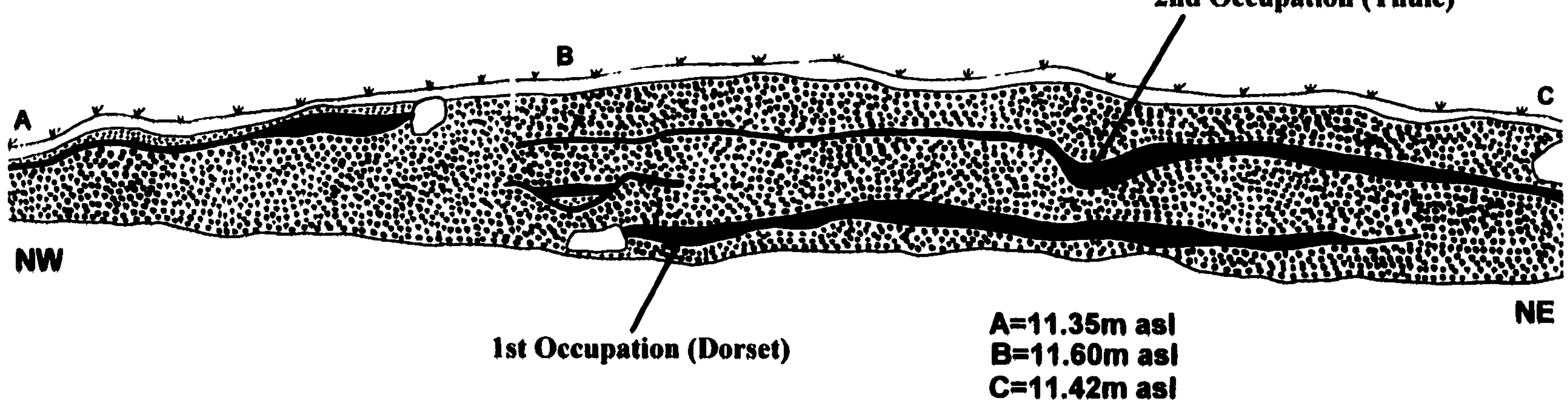


Figure 5.5: Southwall

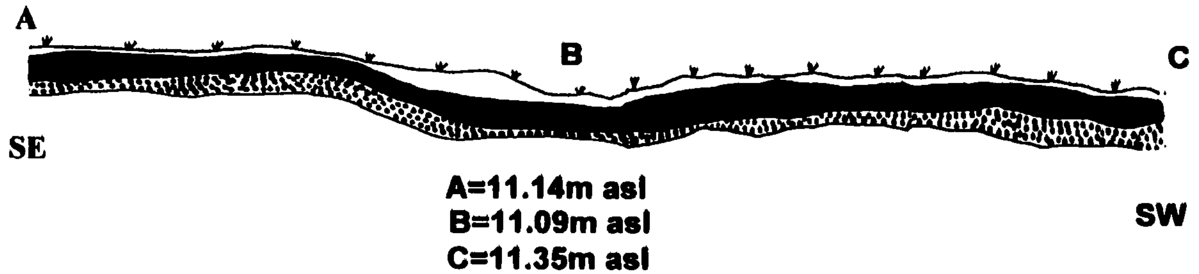


Figure 5.6: Eastwall

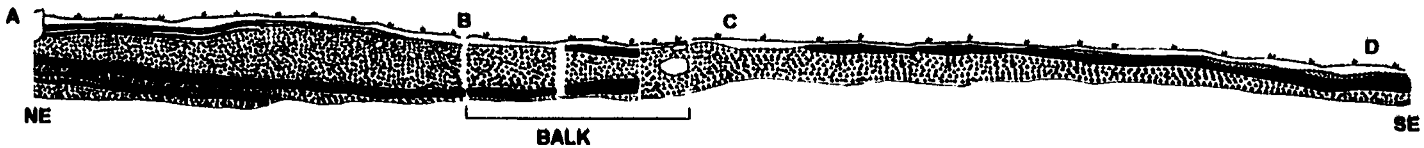
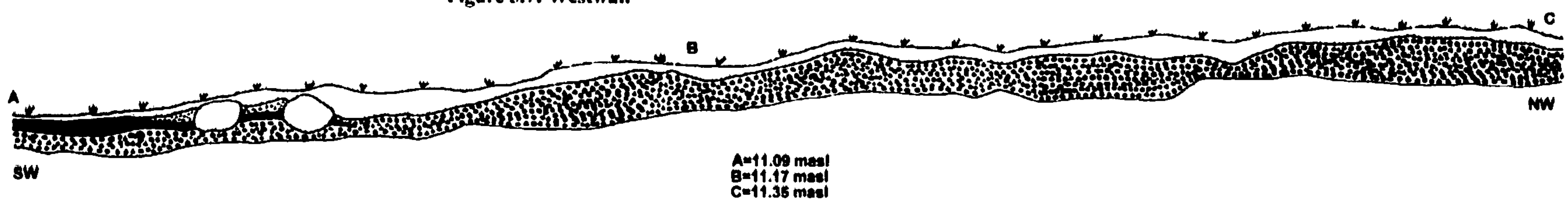


Figure 5.7: Westwall



<u>Radiocarbon Yield and Estimated Date of the Structure</u>

A corrected and calibrated age of 545±120 B.P. (BGS 202) was produced from a charcoal sample taken from the alcove of the entrance passage. The radiocarbon date was processed at the Earth Science laboratory at Brock University. The sample size was 3.0 grams and contained some sand and roots, which were removed at the laboratory. The sample was treated with a 10% HCL acid solution and was rinsed with distilled water. The charcoal was of wood origin, however, the exact species was not determined. The large sigma value made it difficult to pinpoint the actual century of occupation, however, it was a rather conservative estimate that the occupation occurred within the Early Thule period which is dated between 1200 and 1500 A.D. (Park 1993:207). Conservative estimates are required when dating is based on radiocarbon methods alone.

Two main problems exist when radiocarbon dating material from the Eastern Arctic. The first problem comes from dating sea mammal products. A distorting factor called the *reservoir effect* occurs in sea mammals. This effect is caused by the recycling of fossil fuels within the marine food chain, which may result in a older date. In addition, materials which have been contaminated by sea mammal oil, which is found to permeate all areas and materials of a Thule dwelling, may produce the same altered date. Some researchers have determined it is quite impossible to attain a reliable date from the Eastern Arctic and recommend that dates not be taken from sea mammal bones (McGhee and Tuck 1983). Though this is a rather extreme proposition, radiocarbon dates attained from sea mammal should be observed with caution.

The second problem from radiocarbon dates originates from those attained from Arctic trees, specifically Arctic willow. A type of terrestrial reservoir affect has been noted in the Arctic which is caused by the cold environment which results in a collection of 'fossil' carbon from peat and may result in the same incorrect date as sea mammal products (Park 1994:31). Dating from driftwood can also be a problem as dates attained from driftwood specimens are far older than the culture from which they are associated.

Measurements of Structure 1 (Figure 5.8)

The entire excavated area consisting of the dwelling, associated midden and surrounding area was 45 m^2 (Plate 5.1). The total area of the dwelling was 14 m^2. The excavated area that surrounds the dwelling, designated the 'Periphery' is 26 m^2. Five square meters (5 m^2) of the midden was excavated.

Structure 1 was an oval shaped semisubterranean Thule dwelling with a single rear sleeping platform (Figure 5.8). The sleeping platform consisted of a slightly raised sandy area and was 1.5 m long and 3.33 m wide with a depth of 10.64 m asl (note: all subsequent depths are asl) (Figure 5.8 and Plate 5.2). The sleeping platform construction, which was simply a built up sandy area, is consistent with Early Thule occupation in the High Arctic and Classic Thule occupation in Ladrador (Fitzhugh 1994; McCullough 1989; Peter Schledermann: Personal Communication). The living area, which consisted of a stone pavement, was 1.4 m long and 3 m wide with a depth of 10.39 m (Plate 5.3). The right side of the living area, delineated by slightly raised thick stone slabs (coated in grease), was presumably the kitchen/cooking area. It measured 0.45 x 0.44 m. The total length of the entrance passage was 2.3 m and was approximately 0.8 m wide (Plate 5.4). The respective depths of the beginning and end portions of the entrance found on either side of the cold trap were 10.35 m and 10.40 m. The remains of a lintel found at the end of the entrance passage were visible. The cold trap, which had a depth of 10.20 m, was approximately 1.6 m long. A small semicircular alcove was present mid-way through the entrance, which was 1.0m x 0.5m and had a depth of 10.75 m (Plate 5.5).

Figure 5.8: House Plan

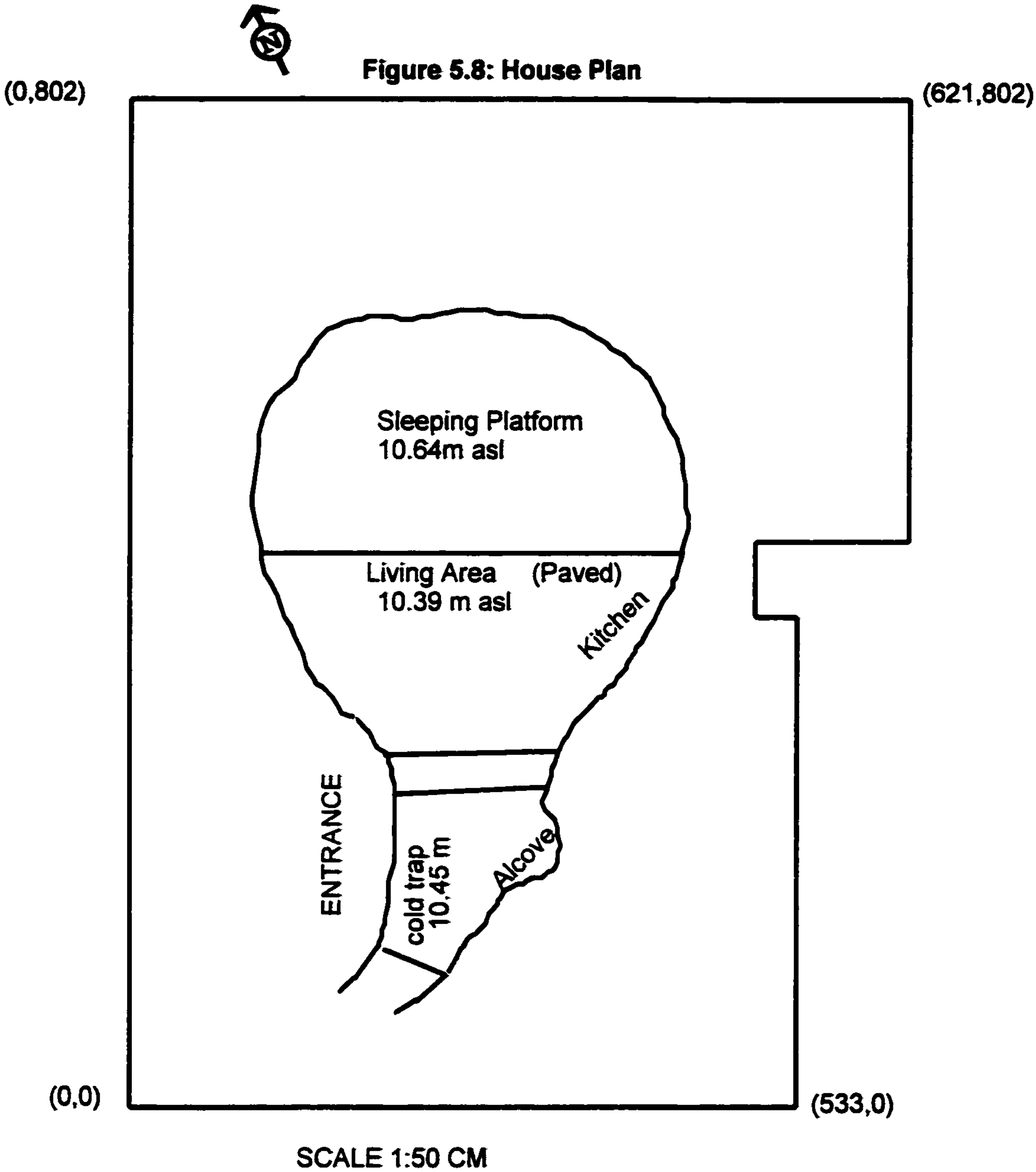


Plate 5.1 Excavated Area Structure 1:JhEv-3 (looking north)

Plate 5.2: Sleeping Platform (looking north)

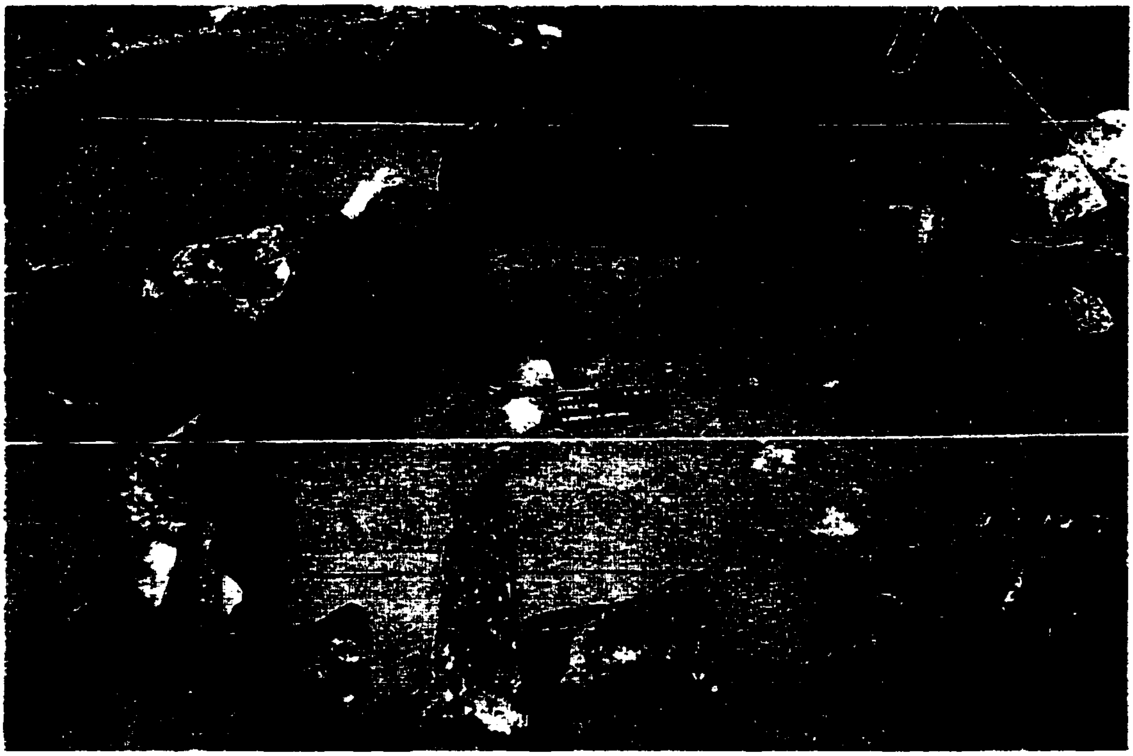


Plate 5.3: Paved Living Area (looking east)

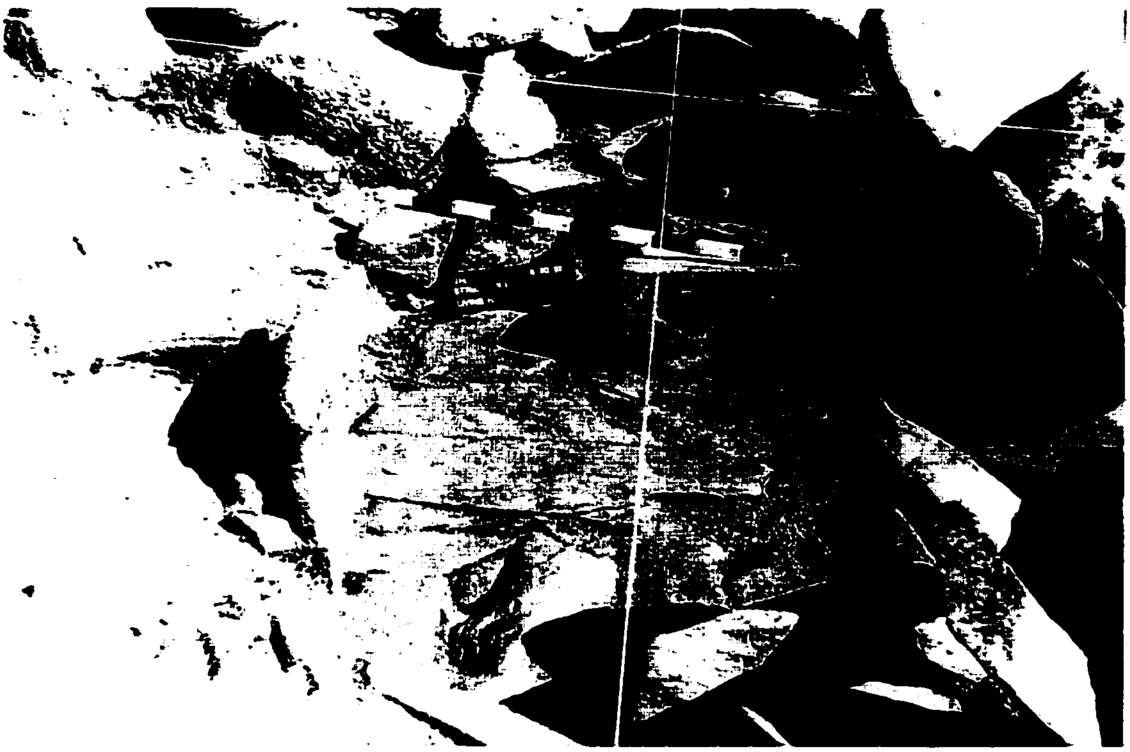


Plate 5.4: Entrance Passage (looking north)

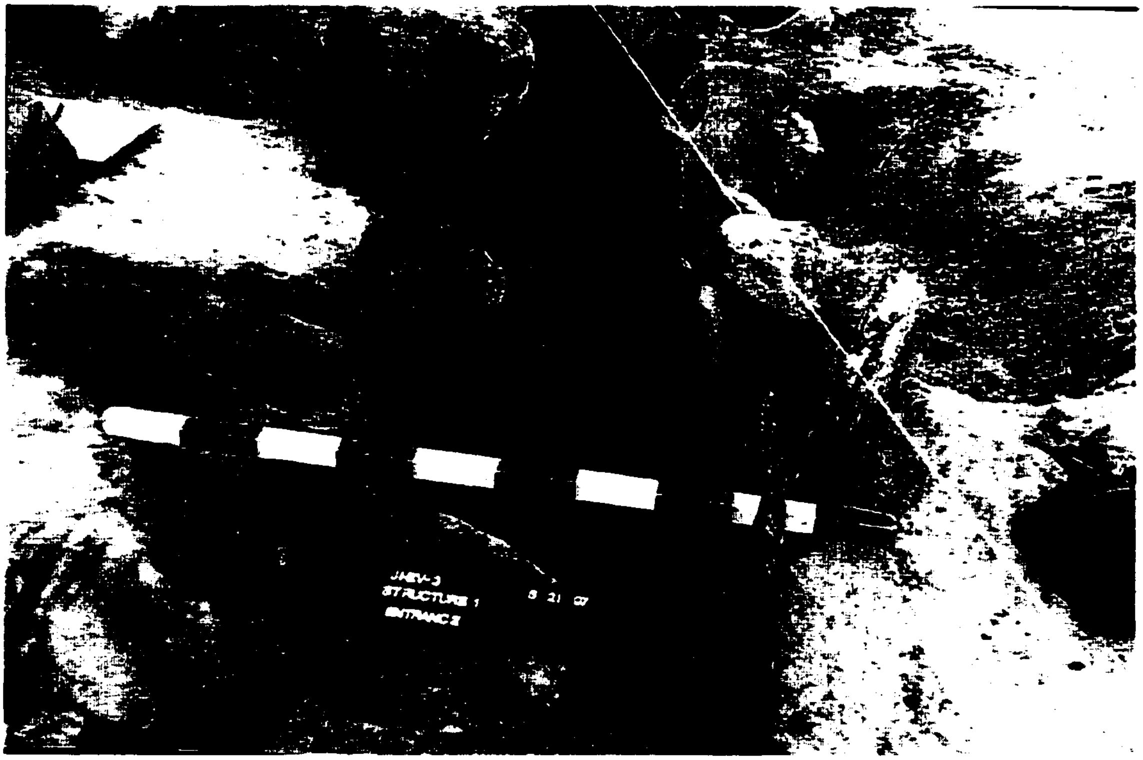
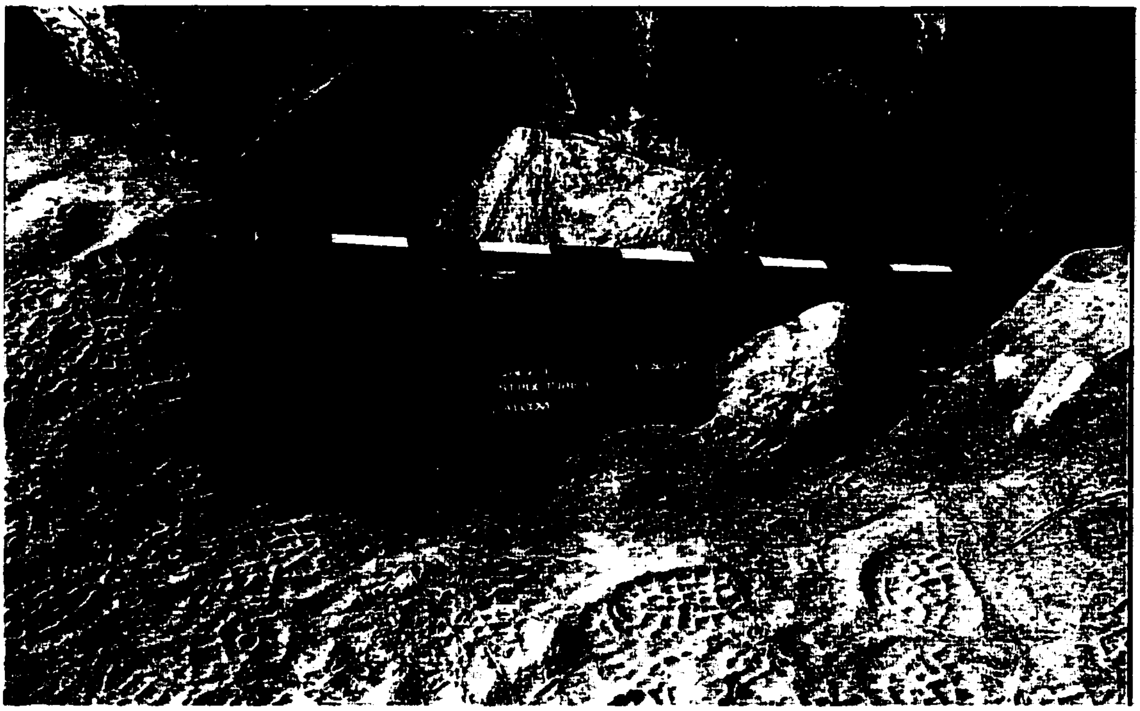


Plate 5.5: Alcove (looking west)



Artifacts

A total of 67 artifacts classified as Dorset, Thule, Dorset/Thule (present in both toolkits), European and 'Unknown' cultural affiliation, were recovered (Artifact descriptions located in Appendix).

Table 5.1: Artifacts

Artifact	Number	Material	Cultural Affiliation
Adze	1	Slate	Dorset/Thule
Core	3	Quartz Quartzite	Dorset
Chopper	7	Metabasalt	Dorset/Thule
Hammerstone	1	Metabasalt	Thule
Knife	8	Slate	Dorset
Lamp fragment	3	Soapstone	Thule
Worked Soapstone	5	N/A	Dorset/Thule
Vessel Fragment	5	Soapstone	Thule
Miniature Vessel	1	Soapstone	Thule
Point	2	Slate Sandstone	Dorset
Preform	2	Slate	Dorset
Retouched Flake	7	Slate Sandstone	Dorset/Thule
Scrapers	3	Chert Quartz	Dorset
Vessel	1	Metabasalt	Thule
Whetstones	5	Metabasalt	Dorset/Thule
Unidentified	2	Slate Metabasalt	Dorset/Thule Thule
Worked Wood	2	N/A	Thule
Worked Antler	1	N/A	Thule
Worked Bone	1	N/A	Thule
Baleen	3	N/A	Thule
Iron	4	N/A	European

Lithic Debitage

Lithic debitage is represented predominantly by a local, low quality soapstone; however, other materials which are available on the Hudson Strait and Ungava Bay were present in small numbers. One chert flake, which originates from Labrador, represents the only 'exotic'. Soapstone, metabasalt, mica and slate were used by both Dorset and Thule groups; however, quartz crystal, milky quartz, black quartzite and chert were materials usually used for Dorset tool manufacture (Maxwell 1985; Plumet 1981, 1994). Eighty percent of the lithic debitage was collected from the peripheral area outside the dwelling, excluding the midden. Ten large soapstone flake concentrations were collected from the northern portions of the peripheral area.

Table 5.2: Lithic Debitage

Material	Number
Soapstone Flakes	1014
Slate	13
Mica	4
Quartz Crystal	2
Metabasalt	2
Black Quartzite	2
Milky Quartz	1
Chert	1
Total	1039

Charcoal and Grease

Charcoal and grease samples were collected by tweezers and placed in an aluminum foil envelope. A total of 25 charcoal samples and 7 grease concentrations were collected throughout the excavated area. Seventy percent of the charcoal collected originated from the SE quadrant designated the 'midden'. Two large charcoal concentrations, 50 cm and 48 cm in diameter, were collected respectively from the midden and the entrance passage (alcove) for the purpose of radicarbon dating the material.

Faunal Analysis

Zooarchaeological Methods Used

Faunal remains represent the single most abundant archaeological material collected at Structure 1. Consequently, the reliance on bones as indicators of human activity is critical for understanding spatial patterning.

Quantification

Once bones are removed from the archaeological site and brought back to a lab, species and element identification is performed. This first step enables a researcher to understand the composition of the faunal assemblage and the relative representation of individual species. Quantification occurs during and after bone identification. Observational units of quantification include number of identified specimens (NISP) which can be quantified during identification and analytical units, some of which include, minimum number of individuals (MNI) and minimum number of elements (MNE) (Lyman 1994:37).

According to Lyman (1994) it is imperative for an analyst to make clear what is being counted, how it is being counted, and why the specimens are counted the way they are. In the past, the majority of researchers ignored these important methodological criteria, for they seemed unnecessary at the time, but such practices actually led to severe misinterpretations and misunderstandings of pertinent information (Lyman 1994:54). It is now considered necessary for a researcher to explain the type of quantification being used, how it is being used and for what purpose (Lyman 1994:53).

The working definition of NISP used in this analysis is from Lyman (1994) who that NISP is "the number of identified specimens for skeletal part".

Three problems have been recognized with using NISP as an interpretative tool for human behavior (Grayson 1984:20-22). The first is that NISP is affected by butchery processes. The practice of butchering an animal will create fragmentation. Since different animals are butchered in different ways a biased representation of certain species within a sample may lead to an inaccurate interpretation of their relative importance. Also, some species have more bones than others and consequently raw bone counts may overestimate the relative importance of one species and discount the importance of others.The third problem with NISP is that certain bones are more apt to break, fragment, or deteriorate. A good example from this analysis is the difference between caribou (terrestrial) and seal (marine) bones. Compared to seal bones, which are highly cancellous, caribou bones are dense and are, therefore, more likely to be preserved. In addition to interspecies differential preservation, bones within a skeleton may have differential preservation, and therefore, some bones have a better chance of showing up in the archaeological record. Both these factors may lead to a biased representation of species and elements in an archaeological assemblage. The fact that NISP is so sensitive to these three factors makes it a problematic tool for intra-assemblage comparison.

The MNI definition used in this analysis is from Shipman (1981:201) who states that minimum number of individuals is "the smallest number of individuals of one species from which the most common skeletal element could have been derived". This definition is used with Klein and Cruz-Uribe's additional method of separating elements into rights and lefts where "we *[the authors]* ordinarily separate paired skeletal elements between lefts and rights and take the MNI for a paired element to be the larger number, left or right." (Klein and Cruz-Uribe 1984:107). As with NISP, many problems have been noted when manipulating bone counts to attain MNI (Grayson 1984:27). First, MNI is a derived calculation and is therefore plagued with all of the weaknesses of NISP. Second, MNI is very sensitive to sample size, and therefore, it is difficult to compare between and within assemblages. The third noted weakness is that different animals yield different quantities of meat. Consequently, a raw MNI value does not take into account this disparity and results in an over or under estimation of the relative importance of different species.

MNE is defined as "the minimum number of different specimens referable to a given anatomical part" (Binford 1984:50). The term 'element' used in Binford's MNE calculation is a specimen that clearly represents a single anatomical part of a skeleton. In using this definition many fragmentary specimens of the same element were not used in calculating MNE. This practice reduces the problem of fragmentation inherent in minimum number calculations as discussed above. The use of MNE is also plagued with the same problems incurred with the use of MNI, as they are both derived and minimum number calculations.

The comparative skeletal collection used to identify specimens comprised the following: (1) two immature and one adult ringed seal skeletons (2) one harp seal skeleton; (3) one incomplete beluga whale skeleton; (4) bowhead whale vertebrae, ribs and skull elements (5) one complete Arctic fox skeleton ; (6) one complete domestic dog skeleton and (7) two immature and two mature caribou skeletons. Identification was also attained by the use of visual aids including Olsen (1973) and Kasper (1980).

Criteria Used for Identification

Order- Criteria for sea vs. land mammal was primarily based on the weight and denseness of bone. As adaptations to their marine environment, sea mammals tend to have lighter and more cancellous bones (King 1983). Land mammals in comparison tend to have denser, heavier bones, as they are weight-bearing animals (Olsen 1973). Observations of the comparative collections and specimens within the sample from JhEv-3 Structure 1 indicates this to be a correct assumption. Determination of small and large seal, small and large whale, caribou and smaller terrestrials, was based primarily on size comparison.

Family- Family designation was based primarily on the criterion of size.

Species- A set of potential species was derived from the natural resources historically (Chapter 2) available in the area. This practice has been criticized by many zooarchaeologists as being unreliable based on the fact that the resources available at the present may be vastly different from the resources available in the past (Legge and Rowley-Conwy 1985:60). However, when comparing Arctic faunal remains dating back to the Dorset period (2500 B.P.) (Maxwell 1985:363) to resources available in the proto-historic (pre-whaling) period, it appears that resources have remained relatively stable (Darwent 1995). Consequently, the set of potential species used in the analysis can be considered relatively reliable.

Due to the difficulty in differentiating seal species, all seals which fit into the size of harbour, harp and/or ringed seal were placed into the *small seal* category. Seal specimens categorized as *large seal* are either bearded and/or walrus unless stated otherwise. Attempts were made to take into account the possibility for age, sex and growth differences within these categories. Identification of the cetacean category was also based on size difference. Bowhead and killer whales are much larger than beluga whales and therefore comparison was not difficult. However, differentiating between bowhead and killer whales was impossible as a comparative skeleton for a killer whale was not available. Therefore, most of the non-beluga whale specimens were categorized as *large whale* of unknown species.

Identification of terrestrial mammals was less difficult than for marine mammals for three reasons. First, variation among terrestrial mammals in the area is small. Second, information available for species differentiation is very comprehensive.Third, the comparative collections for terrestrial animals were more complete.

Element- Gilbert and Steinfeld's (1977) definition of a bone element was used in this analysis. It states that a element is "any bone fragment (such as the proximal femur) that has sufficient detail to permit the identification of the whole bone".

Portion- The criteria for a portion is based on the identification of the element. Portion was recorded if the fragment identified was a distinctive part of an identified element.

Aging- Aging was based on two criteria: (1) amount of fusion and cortex development and (2) size. Aging of seals is based primarily on tooth thin-sections (McCullough 1988). Studies concerning rate of epiphyseal fusion are not yet available for seals, and therefore, only unspecific categories were employed. Consequently, aging was based predominantly on size comparison. The categories used were taken from Karen McCullough's (1988) faunal analysis of a Thule assemblage from Ellesmere Island. They are as follows: (1) Foetal- none present in this sample (2) Immature (3)Adult. Immature seals were categorized based on their size using adult and immature comparative skeletons and by the presence of unfused epiphysis. Specimens were designated as adult when they appeared to have full fusion and when they reached a size which was comparable to an adult seal in the collection. Similar criteria were used for cetacean specimens; however, due to the incomplete comparative collection, fusion was the main tool used in aging.

Aging of terrestrial mammals was based upon size as only shaft portions were present in the assemblage. Consequently, most of the terrestrial animals could not be aged. Some specimens were aged but they were based upon size difference and tooth wear. Age determination for the four carnivore specimens was impossible as comparative collections were not aged and portions represented did not allow for observation of fusion development.

Fusion- As indicated above, all bone specimens were examined for evidence of fusion and defined as being either:(1) unfused (2) fused or (3) partially fused with epiphyseal lines visible.

Abrasion- Defined as wear on the bone producing a type of 'glossy' shine (Brain 1967).

Weathering- Weathering determination was based on the six stages outlined by Behrensmeyer (1978:151).

Stage 0- Bone surface shows no sign of cracking or flaking due to weathering.

Stage 1- Bone shows cracking, normally parallel to the fiber structure...

Stage 2- Outermost concentric thin layers of bone show flaking, usually associated with cracks, in that the bone edges along the cracks tend to separate and flake first.

Stage 3- Bone surface is characterized by patches of rough, homogeneously weather compact bone, resulting in a fibrous texture...

Stage 4- The bone surface is coarsely fibrous and rough in texture: large and small splinters occur and may be loose enough to fall away from the bone when it is moved.

Stage 5- Bone is falling apart in situ, with large splinters lying around what remains of the whole, which is fragile and easily broken by moving.

Table of weathering stages located in Appendix.

Preservation- A designation of Good, Medium and Bad was given to describe the integrity of the bone.

Good- Bone that was completely intact;

Medium- Bone still intact but partly crumbled and surface is sloughed off.

Bad- Bone in pieces and hardly recognizable.

Table of preservation located in Appendix.

Human Modification- A specimen is defined as 'modified' if there is purposeful human manipulation on the bone in order to produce a tool, decoration or toy.

One piece of antler and one bone showed signs of human modification.

Butchery- Signs of butchery are recorded when it is obvious that purposeful cut/breakage indicated on the bone was the outcome of a butchery process. This may be indicated by long cut marks, saw marks, spiral fractures and specific type of breakage on the bone (transverse/snap lines). Signs of butchery were apparent on eleven specimens. Six small seal bones, consisting of four ribs, a humerus and ulna, exhibited signs of butchering/cut marks. Two caribou long bones indicated signs of longitudinal fractures and some cut marks. In addition, cut marks were visible on one walrus veterbra and on both a whale rib and vertebra.

Gnawing- Carnivore and rodent gnawing was not observed on any of the specimens.

Faunal Results

Three hundred and fourteen bones were collected from the excavated area. Three hundred and twenty 'bone' stains, which are bones in an advanced state of decay and are represented by 'organic mush' were recorded. The occurrence of these 'bone stains' is the result of acidic soils (pH 4-5).

Table 5.3:Animals Represented

Faunal Category*	Absolute Frequency (NISP)	Relative Frequency (%)
Small Seal	217	69.3
Bearded Seal	8	2.5
Walrus	6	2.0
Whale	16	5.1
Unidentified Sea Mammal	14	4.5
Caribou	36	11.5
Domestic Dog	4	1.3
Arctic Fox	1	0.3
Unidentified Land Mammal	3	1.0
Unidentified	8	2.5
Total	313	100
Bone Stain	320	

Land Mammals

Arctic Fox (*Alopex lagopus ungava*): This animal has been spotted in the area ethnohistorically and historically, however, its presence is cyclical and therefore there is no certainty of annual presence (Saladin D'Anglure 1967:31).

Table 5.4: Arctic Fox Frequency and Skeletal Representation

Arctic Fox	NISP	MNE
Tibia	1	1
MNI	Tibia	1
Age	Indeterminate	

Domestic Dog (*Canis familiaris)*: Domestic dog were present both prehistorically and historically in the Hudson Strait and associated with Thule and Inuit occupation (Saladin D'Anglure 1967).

Table 5.5: Domestic Dog Frequency and Skeletal Representation

Domestic Dog	**NISP**	**MNE**
Radius	2	2
Femur	1	1
Carnassial (tooth)	1	1
Total	4	4
MNI	Radius	1
AGE		
Unknown	3	
Adult	1	

Caribou (*Rangifer tarandus*): According to Gordon (1887:72-73) caribou were abundant in the area in the 19th century. They spent their time along the coast in the summer and left for the interior during November (Gordon 1887: 72-73). Females would give birth to their young in June (Gordon 1887: 72-73). According to Saladin D'Anglure the caribou's migratory path was closely monitored by the Inuit of the region (Saladin D'Anglure 1967:34). Caribou's main source of food is lichen, moss, shrubbery and grass (Banfield 1974:386). Caribou represents the second most frequent species in the collected assemblage.

Table 5.6: Caribou Frequency

Caribou	NISP	MNE
Skull	3	2
Mandible	2	2
Antler	5	1
Premolar/Molar	1	1
Upper Premolar	3	3
Upper Molar	3	3
Premolar	1	1
Ulna	1	1
Innominate	1	1
Tibia	2	2
Fibula	1	1
Metapodial	1	1
Unidentified Long Bone	5	
Unidentified Bone	9	
Total	38	
MNI	Mandible*	2
AGE		
Indeterminate Age	27	
Subadult	3	
Adult	8	

* Adult and Immature left and right mandibles.

Table 5.7: Caribou Skeletal Representation

Portion	Absolute Frequency	Relative Frequency (%)
Cranial	15	39
Axial	0	0
Upper Limb	1	3
Lower Limb	5	13
Unidentified	17	45
Total	38	100

Marine Mammals

Sea mammals represent 83% of the faunal assemblage and can therefore be considered the main source of food for the inhabitants of Structure 1.

Small Seal

The designation 'small seal' is used for specimens which could either be harp or ringed seal, as it is very difficult to differentiate between the species. However, preliminary investigation, based on the auditory bulla shape, which is considered, by some, a reliable indicator of species (Personal communication Christy Ann Darwent), indicates that 90% of the 'small seal' assemblage is ringed seal. As a faunal category, small seal represents 80% of the sea mammal assemblage.

Ringed Seal (*Phoca hispida*):The ringed seal is one of the smallest seals and averages 1.4 m in length and 91 kg in weight (Banfield 1974:372). Mating season occurs between March and May. The blastocyst, however, is not implanted until July, resulting in a 81 day lag. Two hundred and seventy days later females give birth to pups between middle March and middle April (King 1983:88). Pups are born and remain for some time in sub-surface birth lairs. The pups suckle for approximately two months, considerably long for phocids, but is correlated with being born on fast ice (King 1983:88). Ringed seal's main food source is macro-plankton and some small fish (Banfield 1974:373). The ringed seal is the most common permanent seal in the area (Saladin D'Anglure 1967:35). Ringed seals in Hudson Strait are found to migrate locally throughout the year, and therefore, availability is year-round (Banfield 1974:372-373; Saladin D'Anglure 1967:36). Local migration commences in February and goes until May. Between mid-May and July ringed seals can be found basking on ice floes, as it represents the fasting and molting period (Banfield 1974: 373; Saladin D'Anglure 1967:36). During early autumn, when the ice starts to form, they can be found in large groups. Consequently, this season is considered peak sealing season by the local Inuit (Saladin D'Anglure 1967:36).

Harp Seal (*Phoca groenlandica*): This seal is found in the area during the warmer months as it migrates south during the winter (Saladin D'Anglure 1967:36). Groups of these seals arrive in the area around July. The group size numbers from four to thirty. They can be found in fast-flowing currents, and unlike any other seal, they prefer deep waters (Saladin D'Anglure 1967:36). They usually frequent leads between ice-floes but will sometimes break breathing holes in newly formed sea ice (Banfield 1974:376). The harp seal abandons the area by September when the first snow appears (Saladin D'Anglure 1967:36). The harp seal averages 1.8 m in length and 172 kg in weight (Banfield 1974:376). Females give birth to pups between February and March, and usually nurse them for 2 weeks (Banfield 1974:377; Saladin D'Anglure 1967:36). Within these two weeks the pup will become enormously fat (Banfield 1974:377). The main food source for adults and juveniles is small schooling fish like capelin and herring (Banfield 1974:377). A pups' main diet consists of shrimp and prawns (Banfield 1974:377).

Table 5.8: Small Seal Frequency

Small Seal	**NISP**	**MNE**
Skull	4	2
Auditory Bulla	15	12
Mandible	1	1
Tooth (Canine)	2	1
Indeterminate Veterbrae	15	8
Cervical	5	3
Thoracic	8	6
Lumbar	3	3
Sacral	1	1
Caudal	2	2
Rib	29	15
Costal Cartilage	5	2
Scapula	2	2
Humerus	22	19
Radius	4	2
Ulna	2	2
Innominate	11	8
Femur	5	3
Tibia	16	10
Fibula	3	2
TibioFibula	1	1
Patella	1	1
Astralagus	4	4
Calcanuem	3	3
Cuboid	3	3
Metatarsal Indeterminate	8	8
Phalanx Indeterminate	2	2
Unidentified Long Bone	11	
Unidentified	30	
Total	217	
MNI	Left Humerus	11
AGE		
Indeterminate Age	111	
Subadult	84	
Adult	22	

Table 5.9: Small Seal Skeletal Representation

Portion	Absolute Frequency	Relative Frequency (%)
Cranial	22	10
Axial	70	32
Upper Limb	31	14
Lower Limb	54	25
Unidentified	41	19
Total	217	100

Bearded Seal- (*Erignathus barbatus*): The bearded seal is the most abundant permanent seal found in this area (Saladin D'Anglure 1967:36). The bearded seal prefers shallow waters that are free of moving ice and gravel beaches (King 1983:102). They are usually associated with drifting ice floes for much of the year (King 1983:102). The average length is 2.25 m and average weight 250 kg (Banfield 1974:366). Bearded seals are not gregarious animals and are usually not to be found in large numbers(Banfield 1974:366; King 1983:102; Saladin D'Anglure 1967:37).

Table 5.10: Bearded Seal Frequency

Bearded Seal	NISP	MNE
Rib	2	2
Humerus	1	1
Innominate	1	1
Tibia	1	1
Femur	1	1
Fibula	1	1
Metatarsal	1	1
Total	8	8
MNI	Longbone	1
AGE		
Indeterminate Age	4	
Subadult	2	
Adult	2	

Table 5.11:Bearded Seal Skeletal Representation

Portion	Absolute Frequency	Relative Frequency (%)
Cranial	0	0
Axial	2	25
Upper Limb	1	12.5
Lower Limb	5	62.5
Unidentified	0	0
Total	8	100

Walrus (*Odobenus rosmarus*): An adult walrus weigh between 800-1200kg and is between 2.5 to 3 m in length (King 1983:68).Considered a migratory species, walrus are available in Hudson Strait throughout the whole year; however, their presence is guaranteed in summer and autumn (Saladin D'Anglure 1967:37). The migration route begins in the High Arctic and ends in southern Labrador (Saladin D'Anglure 1967:37). Adult males are the first to arrive, a few weeks earlier than females and pups' as walrus populations are found to have a strict social division based on sex (Banfield 1974: 363; Saladin D'Anglure 1967:37). According to Saladin D'Anglure (1967:38) walrus represented an important resource in winter during early historic times.

Table 5.12: Walrus Frequency

Walrus	NISP	MNE
Caudal Vertebrae	5	5
Scapula	1	1
Total	6	6
MNI	Scapula	1
AGE		
Adult	6	

Table 5.13: Walrus Skeletal Representation

Portion	Absolute Frequency	Relative Frequency (%)
Cranial	0	0
Axial	5	83
Upper Limb	1	17
Lower Limb	0	0
Unidentified	0	0
Total	6	100

Whale

Based on comparative material, both beluga and bowhead are represented in this sample. Some cetacean specimens, which could be considered killer, beluga or bowhead based on size difference, were assigned to the broad category of 'whale', because comparative material was not available.

Killer Whale (*Orcinus orcas*): The killer whale arrives in July/August, usually after the arrival of the beluga (Saladin D'Anglure 1967:39). The killer whale is the largest of the dolphin family with an average length of 6 m (Banfield 1974:263).They usually travel in groups and are highly gregarious animals (Banfield 1974:264). Bulls (adult males) travel together, separately from the cows (adult females), calves and juveniles (Banfield 1974: 264). They are found close to shore and are considered relatively accessible to hunt (Saladin D'Anglure 1967:39).

Beluga (*Delphinapterus leucas*): The beluga migrate every year and can be found in the Wakeham Bay area around May (Saladin D'Anglure 1967:39). By June large groups can be found near the shore. By October they leave; however, some beluga are found to remain in the Hudson Strait during the winter (Saladin D'Anglure 1967:39). They are considered small by whale standards as their average length is about 3 m (Banfield 1974:250).

Bowhead (*Balena mysticotus*): Bowhead have been reported in the area around coastal summer camps (Saladin D'Anglure 1967:40). According to the local Inuit they usually travel in groups of two. This is typical of summer migratory behavior, as they frequent bays and estuaries during their summer migration. According to Saladin D'Anglure (1967:40), washed-up carcasses of bowhead whales can be found on shorelines. According to Banfield (1974:283), the bowhead whale's migratory route includes the Ungava area, and they could also be found in the area during winter, as it represents the southerly extent of the Arctic zone.

Table 5.14: Whale Frequency

Whale	NISP	MNE
Skull	3	1
Tooth	1 (Beluga)	1
Vertebrae Indeterminate	7 (2-Bowhead/2-Beluga)	4
Caudal Vertebrae	1	1
Rib	2 (1-Bowhead)	2
Scapula	1 (Beluga)	1
Total	16	10
MNI (Bowhead)*	Vertebrae	1
MNI (Beluga)*	Scapula	1
AGE		
Indeterminate Age	12	
Subadult	3	
Adult	1	

* Bowhead and beluga veterbrae were differentiated based on size difference, and consequently, the assemblage indicates the minimal presence of two cetacean species.

Table 5.15: Whale Skeletal Representation

Portion	Absolute Frequency	Relative Frequency (%)
Cranial	4	25
Axial	11	69
Upper Limb	1	6
Lower Limb	0	0
Unidentified	0	0
Total	16	100

Spatial Patterning

Spatial analysis was performed using a multi-method approach advocated and employed by Rigaud and Simek (1991). This process uses three increasingly complex levels of analysis starting with visual inspection, followed by refitting and then statistical analysis. No artifacts or bones could be refitted and therefore only visual inspection and statistical analysis were used.

Provenience of all archaeological material was recorded and mapped during excavation. This information was then transferred to scale using the Generic Computer Automated Design and Draft program (Generic CADD 6.0 Reference Guide 1992). This program allows for the creation of 'layers' so specific materials can be separated and viewed alone or together with other 'layers'. All material, consisting of structural rocks, artifacts, flakes, charcoal and grease stains, bone stains and bones were separated into five depths based on arbitrary levels at every 20cm. They are as follows: Depth 1:11.63-11.50 m, Depth 2:11.51-11.30 m, Depth 3:11.31-11.10 m, Depth 4:11.11-10.90 m and Depth 5: 10.91-70 m . Faunal material was further separated by layers based on species category and skeletal part, which consisted of cranial, axial, upper limb and lower limb.

Visual Inspection

Visual inspection involves examining distribution maps (Figures 5.9-5.19) and identifying distinct clusters of material (Rigaud and Simek 1991). The 'visualization' of these clusters is, therefore, influenced and guided by a researcher's expectations and prior knowledge of spatial patterns common among a specific culture. This method involves separating an area into its largest divisible components and is followed by further separation of these larger areas (Rigaud and Simek 1991). Consequently, the excavated area was divided into three main clusters based on their position relative to the dwelling. The three clusters include the dwelling (A), associated midden (B) and the remaining area surrounding the dwelling (C) (Figure 5.18). As the dwelling is semi-subterrean, these clusters can be further separated by relative depth. Material from cluster A was associated with Depths 4 and 5 that were located on the living floor, whereas material from clusters B and C were associated with Depths 1-3. The information below indicates a fairly clear spatial separation between Dorset (cluster C) and Thule (cluster A) materials and by extension between Depths 1-3 and 4-5 (Figures 5.20 and 5.21).

Table 5.16: Legend for Figures 5.9-5.13, 5.20-5.21

Code	Element (R/L-Right/Left)	Code	Element (R/L-Right/Left)	Code	Element (R/L-Right/Left)
A	Antler	**MT**	Metatarsal	**T1-T4**	Tarsal 1-4
AB	Auditory Bulla	**ME**	Metapodial	**TA**	Talus
AS	Astralagus	**MD/R/L**	Mandible	**TF/R/L**	Tibio-fibula
BR	Braincase	**MA/R/L**	Maxilla	**TC**	Tooth Canine
CA	Carpal	**OC**	Occipital	**TM**	Tooth Molar
CAL	Calcaneum	**P**	Patella	**TP**	Tooth Premolar
CAR	Carnassial	**PHL**	Phalange Lower	**Ty**	Tympanicum
C	Caudal	**PHU**	Phalange Upper	**ULB**	Unidentifed Long bone
CC	Costal Cartilage	**Ri**	Rib	**UB**	Unidentified bone
F/R/L	Femur	**R/R/L**	Radius	**U/R/L**	Ulna
FI/R/L	Fibula	**SK**	Skull	**V**	Verterbra
H/R/L	Humerus	**SC/R/L**	Scapula		
I/R/L/	Innominate	**SA**	Sacrum		

The entire structure, designated by cluster A (Figure 18), is approximately 14 m^2 in area. Investigation of the materials present suggests distinction in terms of bones, charcoal and artifacts. Small seal axial elements were the most frequent specimens found in this assemblage, followed by caribou cranial elements, whale axial elements and canid long bones. In addition, 34% (109/320) of the bone stains were from inside the structure. Twelve of the thirty-two collected charcoal and grease specimens were from inside the dwelling. The inside area was, however, poor in terms of lithic debitage which accounted for only 9% of the total lithic assemblage. Further visual analysis indicates the existence of three distinct clusters, designated clusters 1A, 2A and 3A (Figure 5.19). These three clusters consist of the eastern portion of the paved area (living area), the western portion of the sleeping platform and the eastern portion of the entrance passage.

Figure 5.9: Domestic Dog and Arctic Fox distribution

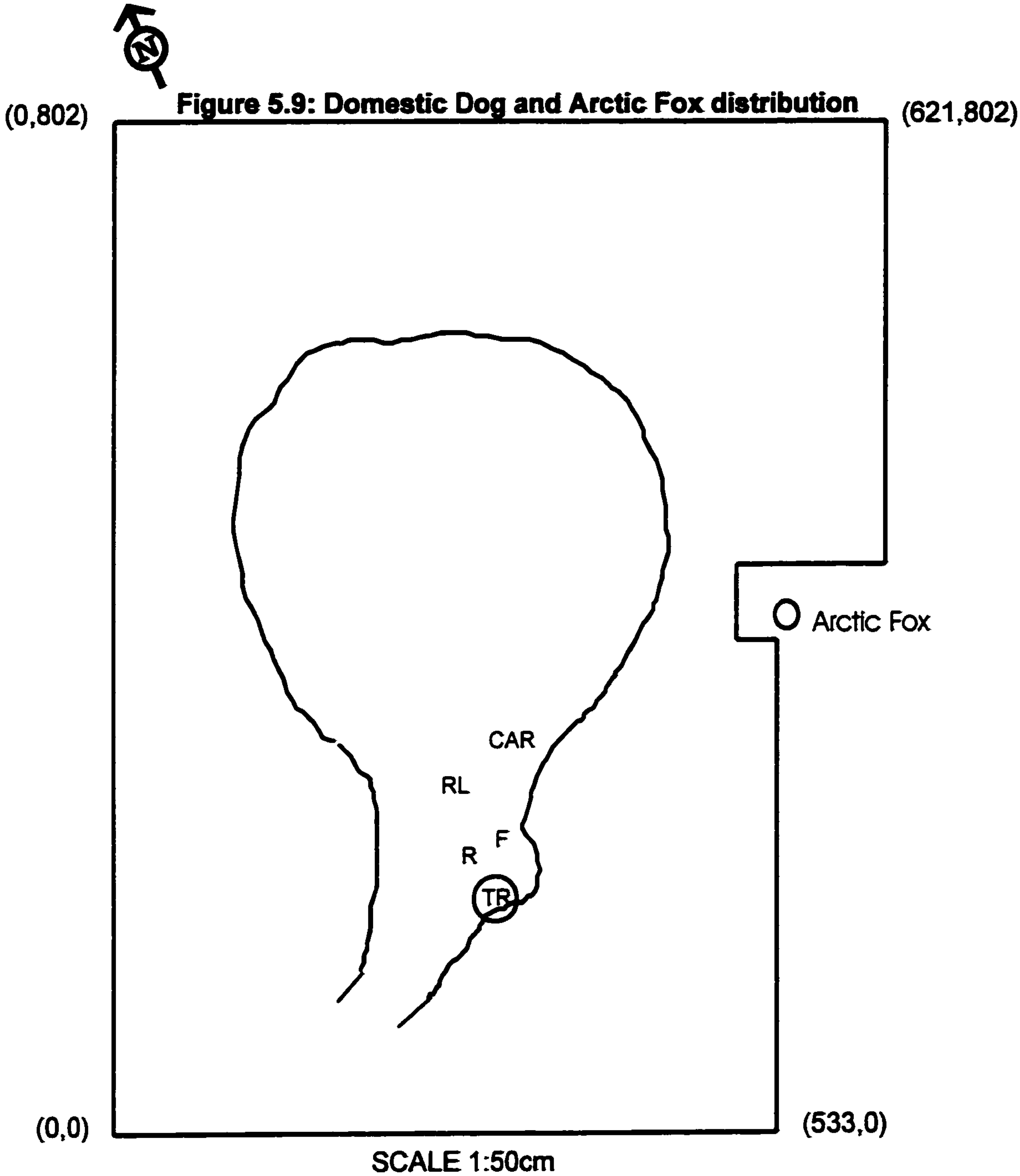


Figure 5.10: Caribou Distribution

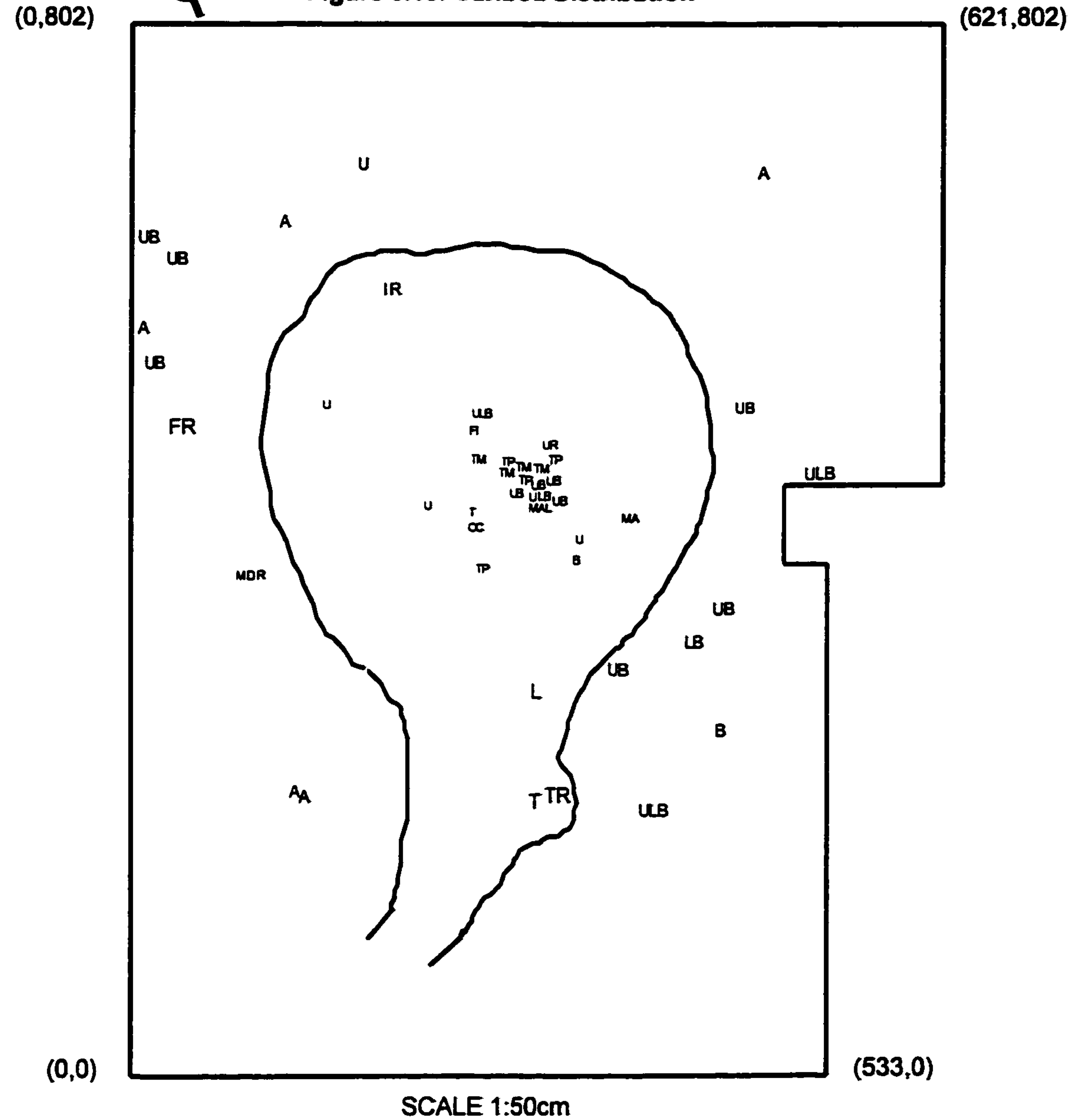


Figure 5.11: Small Seal Distribution

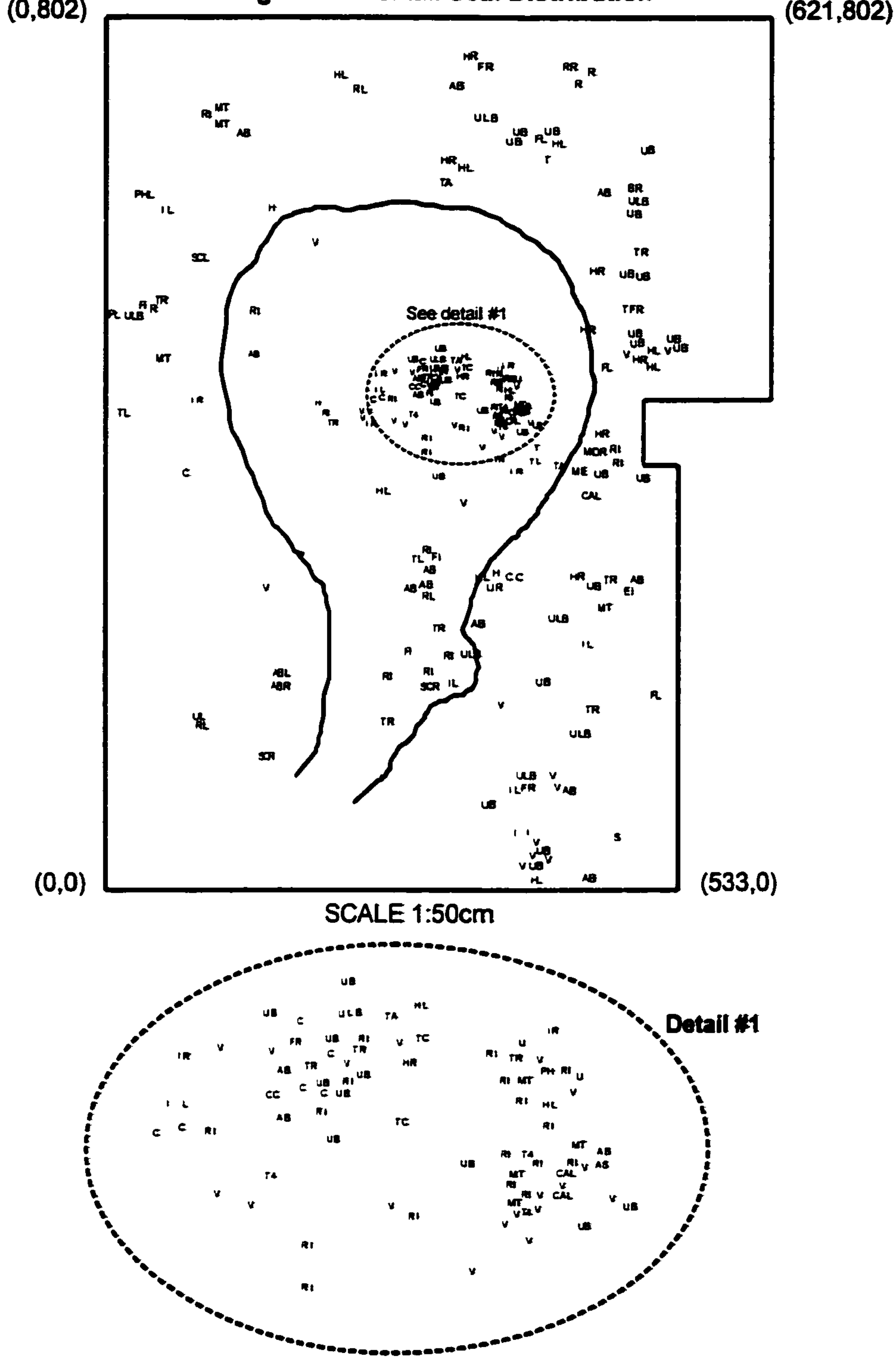


Figure 5.12: Walrus and Bearded Seal Distribution

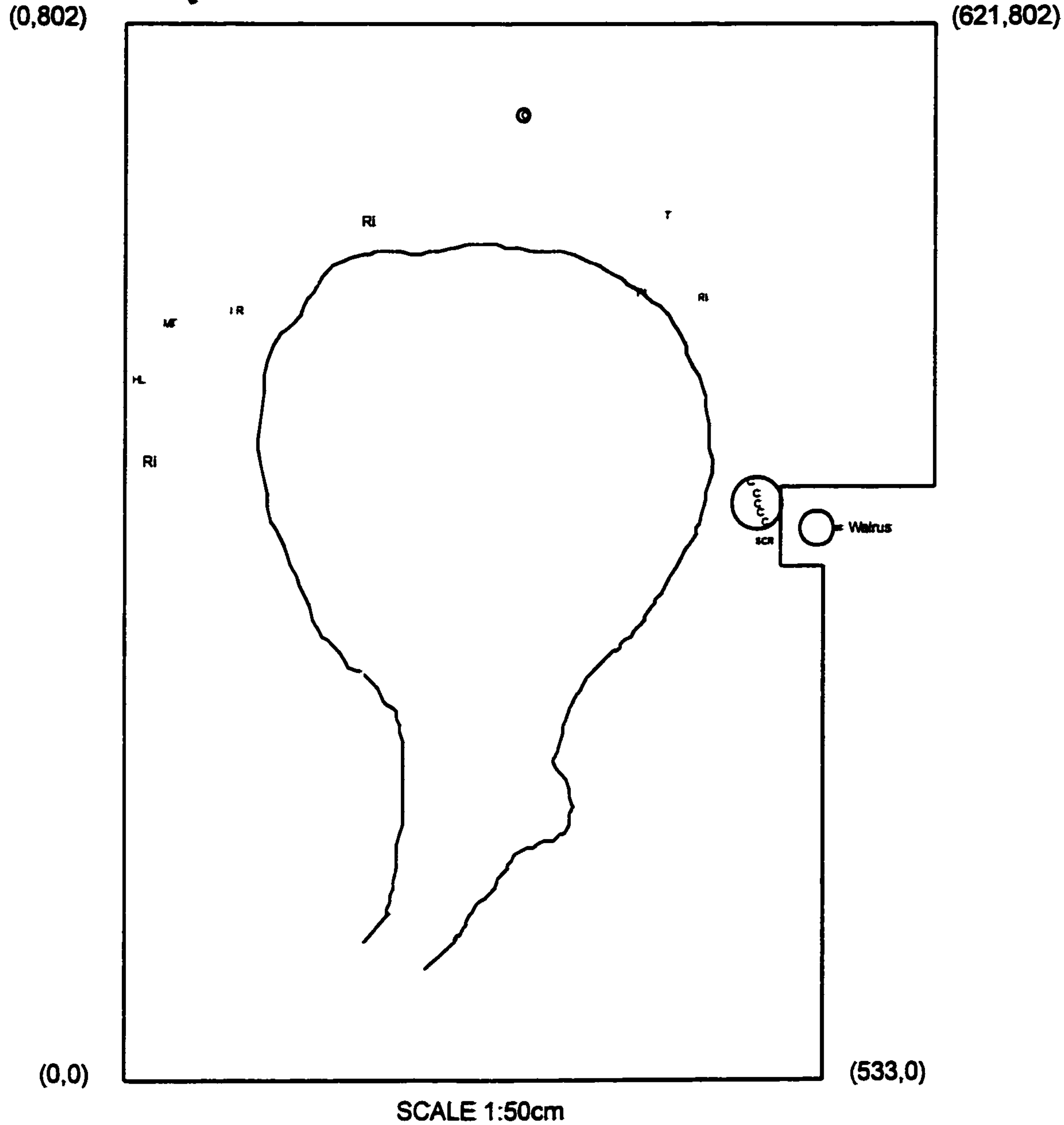


Figure 5.13: Whale Distribution

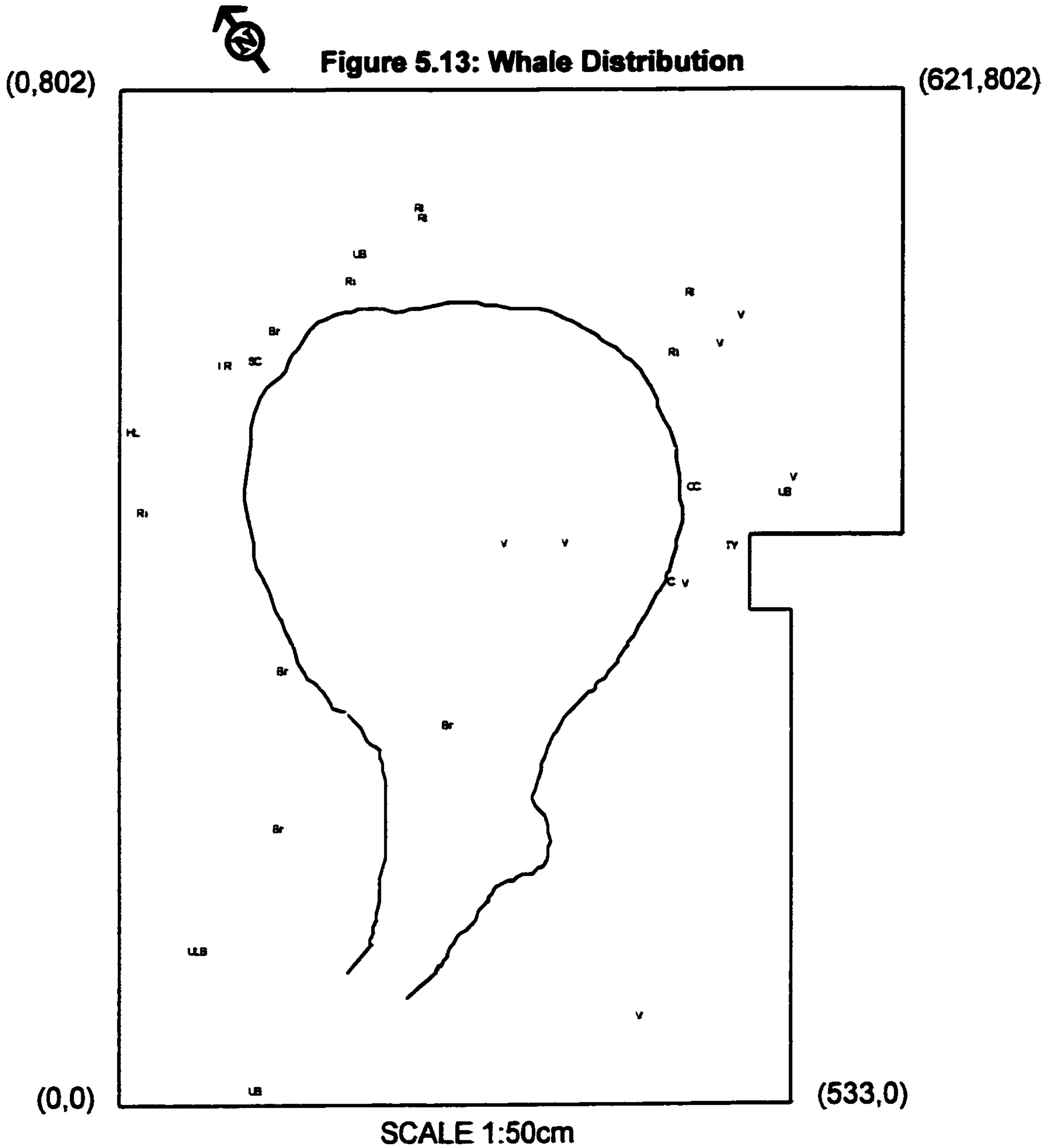


Figure 5.14: Bone Stain

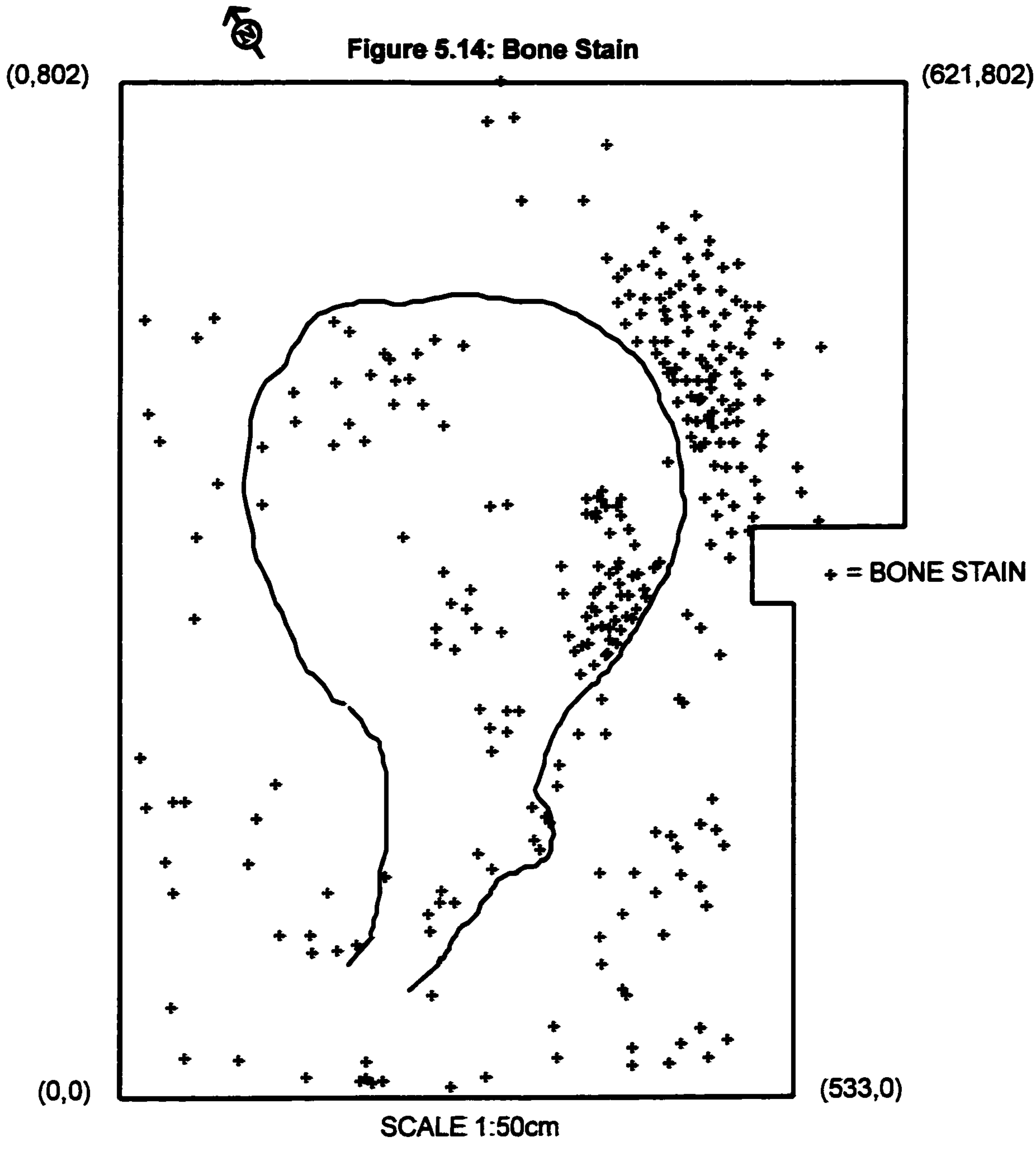
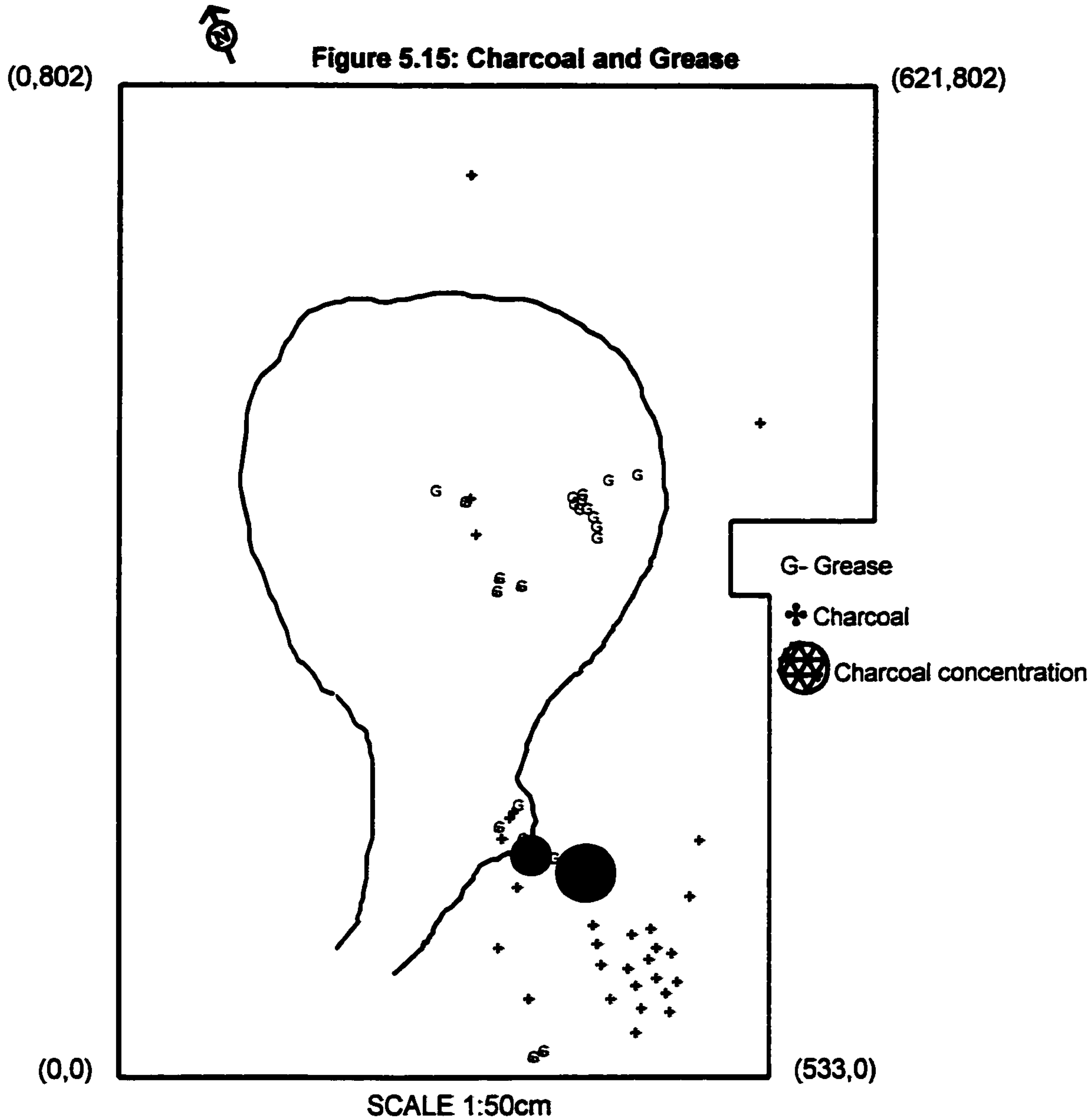


Figure 5.15: Charcoal and Grease



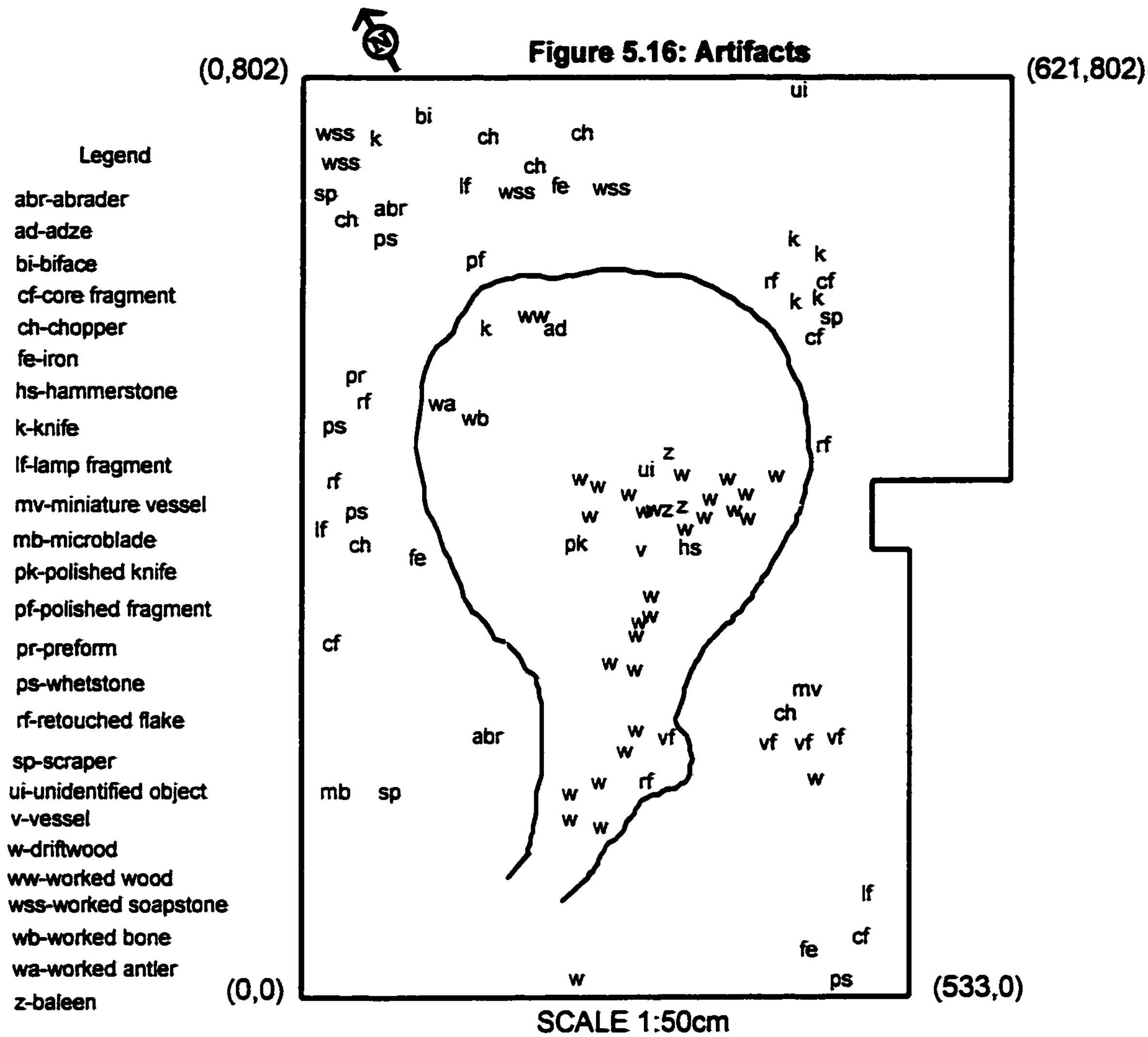
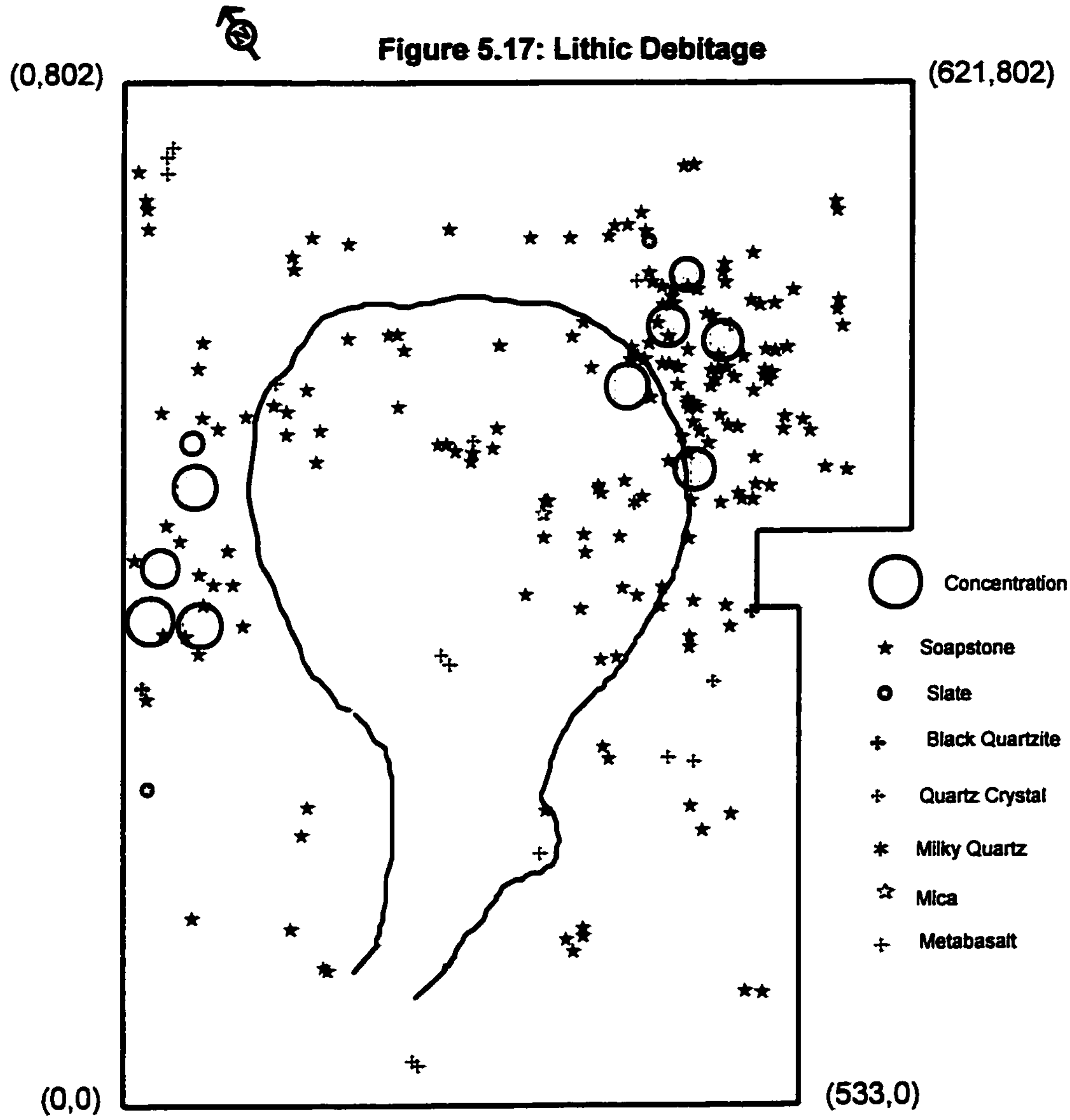


Figure 5.16: Artifacts

Figure 5.17: Lithic Debitage



SCALE 1:50cm

Figure 5.18: Visual Inspection Three Clusters

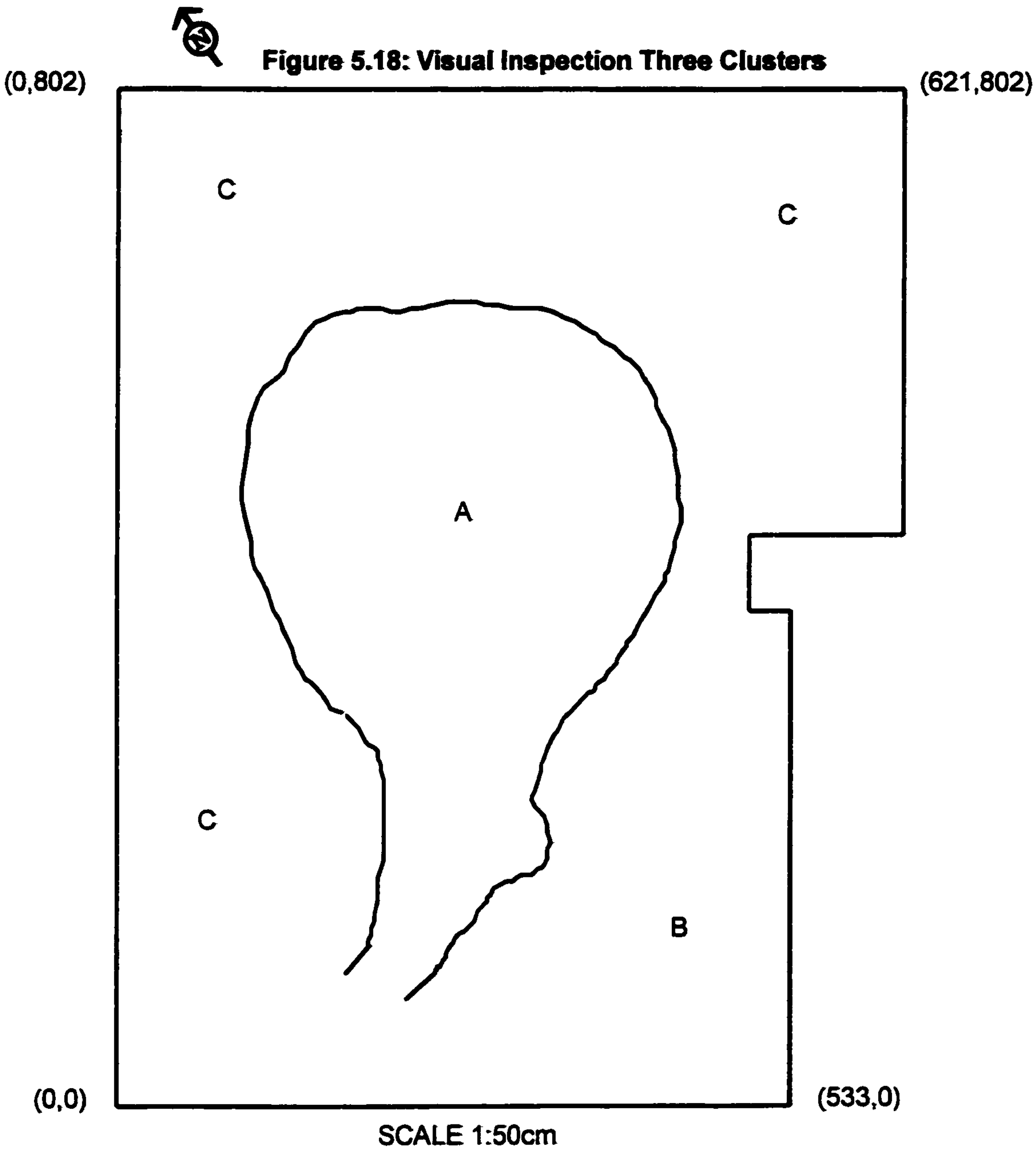
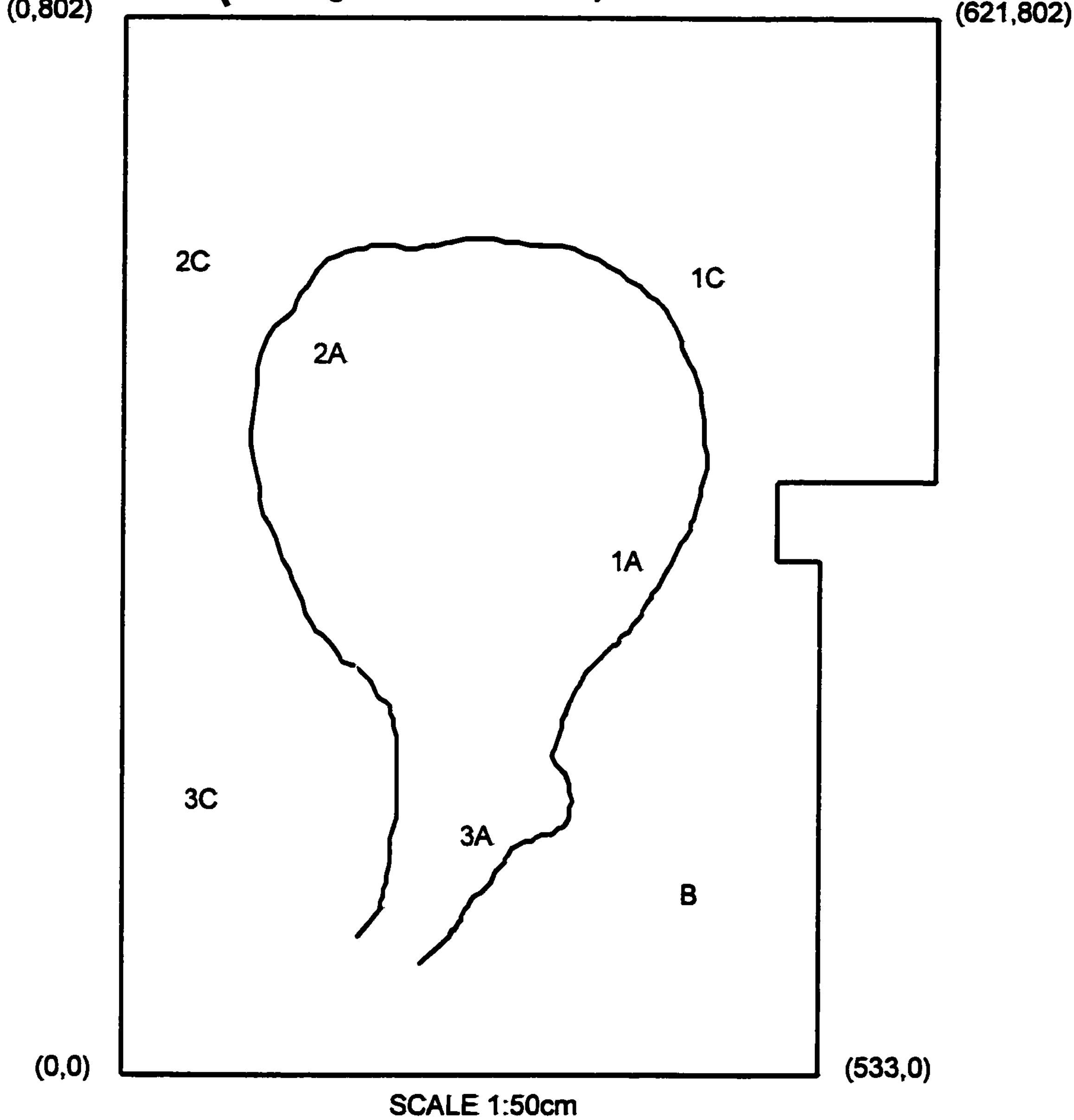


Figure 5.19: Visual Inspection Six Clusters



The first cluster (1A), represented by the eastern portion of the living area, is distinct in terms of its faunal and grease assemblage (Figure 5.19). This area, which is roughly 0.8m x 0.8m, accounts for 67% of the total house faunal assemblage and consists solely of small seal and caribou. In addition, 72 of the 109 recorded bone stains and nine of the twelve (75%) collected grease and charcoal specimens were found within this confined area. Artifacts consisted of wood, baleen, and a metabasalt hammerstone.

The second cluster (2A), which is located on the western portion of the sleeping platform, is distinct in terms of the types of artifacts and amount of bone stains present (Figures 5.19). The only organic artifacts recovered from the excavation were located in cluster 2A. In addition, all other bone stains recorded inside the structure, apart from cluster 1A, were located on the western portion of the sleeping platform.

The third cluster (3A) (Figure 5.19) is represented by the eastern portion of the entrance passage which includes the alcove. This area is distinct in terms of the amount of wood present, its faunal composition and the number of charcoal specimens. All canid specimens recovered from the excavation were located in this cluster. All remaining specimens of grease and charcoal found inside the dwelling were retrieved from the alcove. In addition, this portion of the entrance passage was littered with small specimens of wood.

The midden (B) (Figure 5.18 and 5.19), was designated so, based on its similarity to other recorded middens (Chapter 4). The designation was based on: (1) its location in relation to the dwelling (directly in front of and adjacent to the entrance), (2) the high frequency of charcoal, grease and low quality artifacts (refuse) and (3) the faunal elements represented (Binford 1978). All artifacts collected in this area were of Thule cultural origin and were primarily represented by used soapstone vessel fragments. A miniature soapstone vessel was collected in this cluster and represented the only complete artifact found in the midden. This miniature vessel may indicate the presence of small children during occupation (Park 1998). Over sixty two percent of the charcoal collected was retrieved from the midden. Faunal remains were predominantly small seal and caribou. All small seal elements were well represented, which indicates that whole carcass transport was practised. The caribou assemblage, however, was primarily represented by fragmented long bones.

The third area (C) (Figure 5.18) represents the 'left over' portion of the excavated area and is not structurally defined, as were the other two clusters. This cluster is distinct in terms of the number of Dorset artifacts, lithic debitage, bones and bone stains. Closer investigation indicates the presence of three smaller clusters within cluster C.

The first of these smaller clusters (1C) (Figure 5.19) is located on the northeastern portion of the excavated area abutting the dwelling wall. This cluster is distinct in terms of its dense aggregation of bone stains, bones, flakes and artifacts. It is approximately 0.5m x 0.5m and contained 60% (600/1014) of the total lithic debitage assemblage. All diagnostic artifacts collected are of Dorset origin and represent low-quality knives and knife preforms (Plumet 1991). The faunal assemblage had the greatest variety of species consisting of small seal, large seal, whale and caribou.

The second smaller cluster (2C) (Figure 5.19) is located on the northwestern limit of the excavation abutting the dwelling wall. This cluster is distinct in terms of its artifact, lithic debitage and faunal assemblage. Artifacts represented are of Dorset and unidentified cultural origin. The latter category consists mainly of choppers and worked soapstone. Dorset artifacts consist of knife preforms, soapstone vessel fragments and two scrapers. In addition, cluster 2C is similar to cluster 1C in having a high frequency of lithic debitage and a variety of species.

The third cluster (3C) (Figure 5.19) is located in the southwestern portion of the excavated area, adjacent to the entrance passage. A thin distribution of material was recovered from this cluster. Three artifacts were present and consisted of a Dorset microblade and scraper and a whetstone, which could not be assigned to a cultural origin. Cluster 3C is represented by four flakes and ten bone stains. The faunal assemblage consisted of two cranial whale fragments and six small seal specimens.

Figures 5.20 and 5.21 are distribution maps of all archaeological material from Depths 1-3 and 4-5 which illustrates that all collected material can be separated by depth inside vs. outside the dwelling, and by cultural affiliation. Nearly all collected material from inside Structure 1 was found on the cultural level associated with the living floor.

Table 5.17 provides a brief description of the cluster's, as determined by visual inspection.

Table 5.17 Visual Inspection Cluster Description

Cluster	Description
1A (Depth 4-5)	Dense aggregation of bones (small seal and caribou), high number of charcoal and grease and bone stains
2A (Depth 4-5)	Presence of organic artifacts and dense cluster of bone stains.
3A (Depth 4-5)	Presence of charcoal and grease, wood and domestic dog and Arctic fox specimens.
B (Depth 1-3)	High amount of charcoal, presence of broken artifacts, and presence of distinct small seal and caribou elements.
1C (Depth 1-3)	High amount of lithic debitage, low-quality Dorset artifacts, bone stain and varied species.
2C (Depth 1-3)	High amount of lithic debitage, Dorset and unidentified culture artifacts, and varied species representation
3C (Depth 1-3)	Dorset artifacts and low frequency of faunal material.

Figure 5.20: Archaeological Material from Depths 1-3

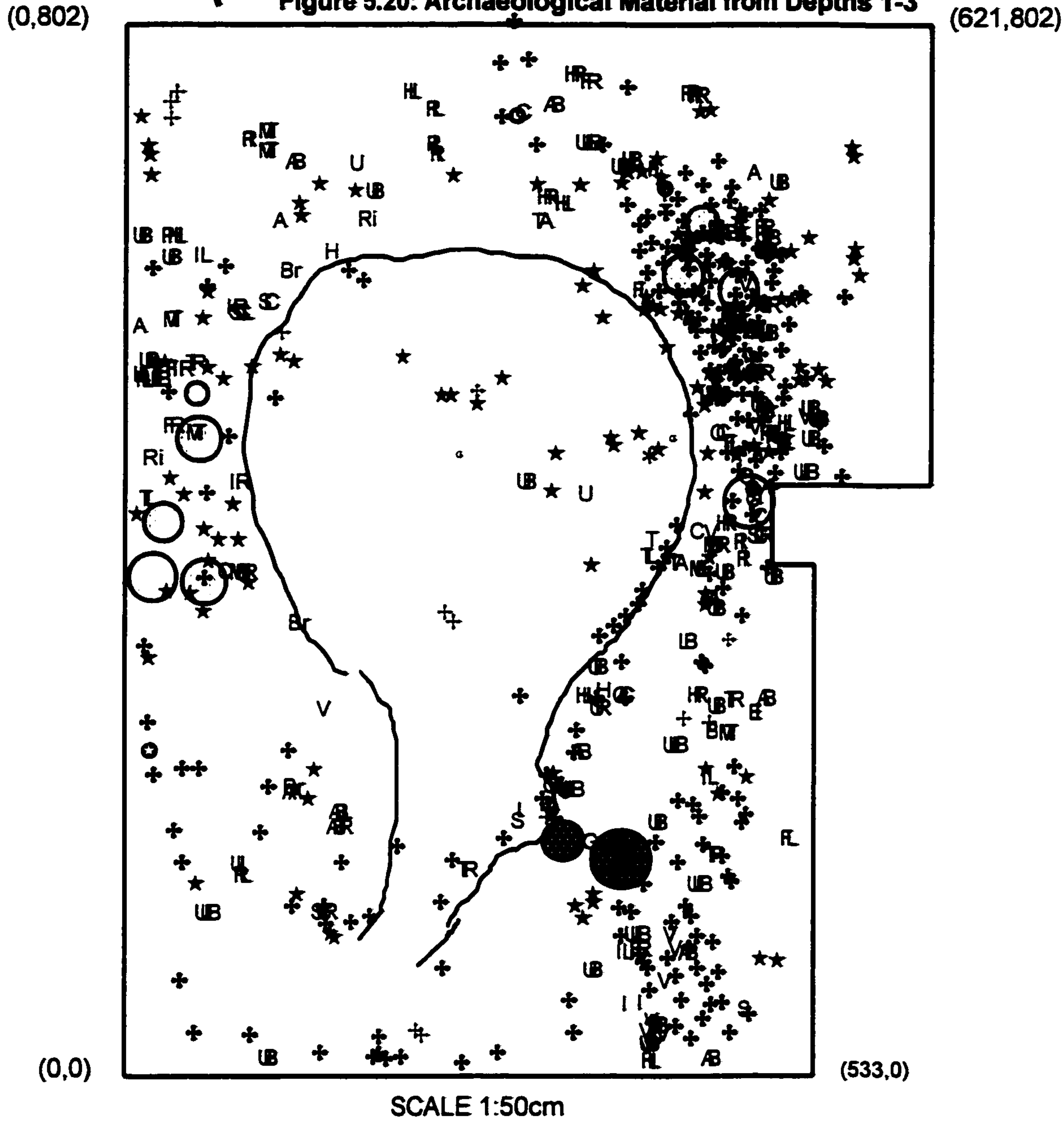
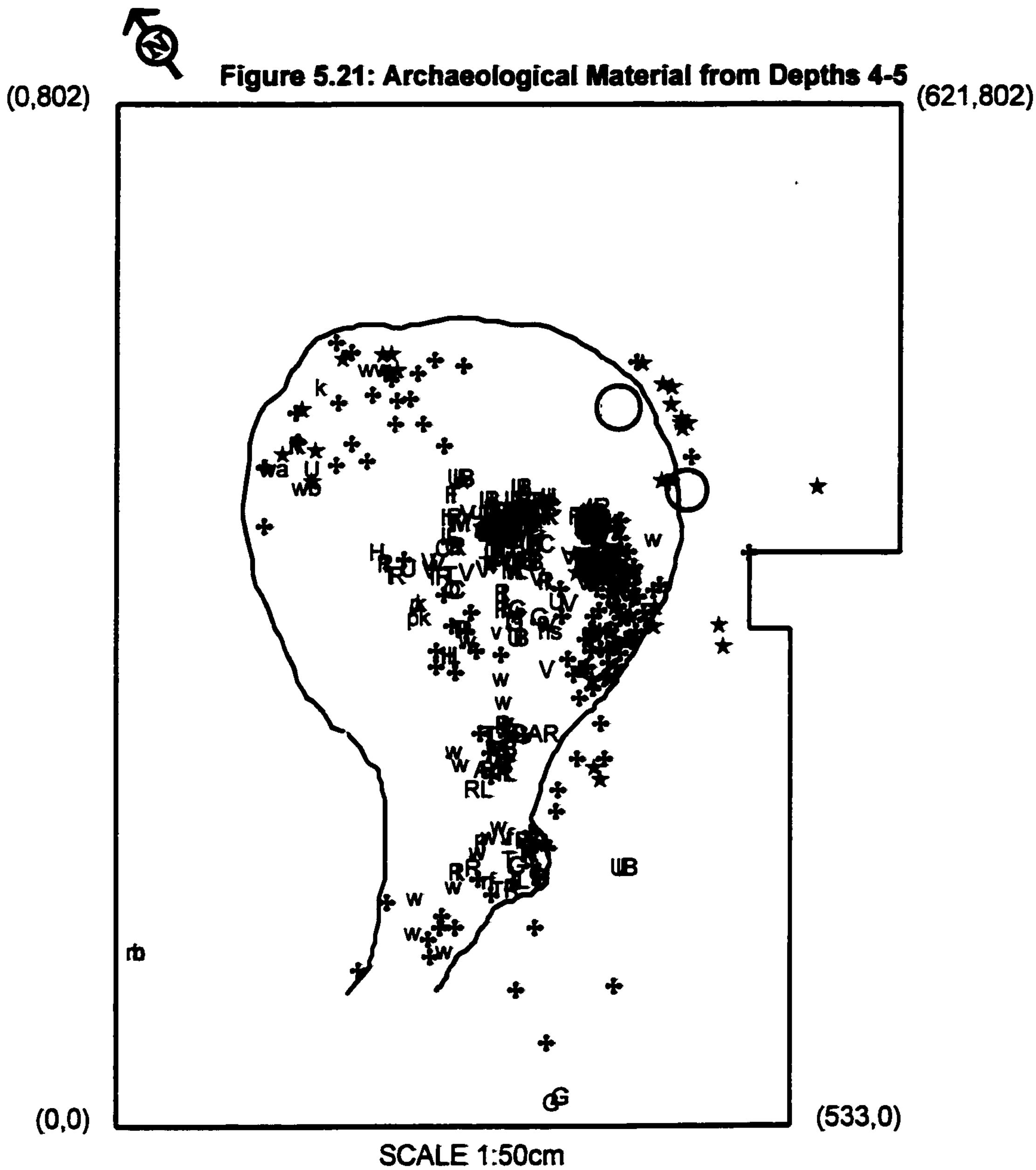


Figure 5.21: Archaeological Material from Depths 4-5



Statistics

The first statistical method used was a k-means cluster test. This procedure was first applied in archaeology by Hodson (1971) and has been subsequently outlined by Johnson and Johnson (1975) and Kintigh and Ammerman (1982). According to Kintigh and Ammerman (1982:39), who provide a thorough explanation of this procedure, the k-means program is "a non-hierarchical divisive cluster analysis which attempts to minimize the intracluster variance while maximizing the intercluster distance". This procedure is well suited for archaeologists as it can be used with input data from x and y coordinates. The method starts with one cluster and continues to separate this one cluster into some previously defined maximum number of clusters. As a consequence, this procedure is very much dependent on what researchers expect as a result, as they decide the minimum and maximum number of clusters. Each cluster is defined by its center point and by the objects assigned to that cluster. The clustering criterion is designed to minimize the sum squared error or SSE. According to Kintigh and Ammerman (1982:39) "the SSE is calculated as the sum over all objects in the analysis of the squared Euclidean distance from each object to the centroid of the cluster to which it is assigned". As a result, if the cluster is very tight or clustered around the centroid the SSE will be low.

The second statistical procedure in the analysis is covered under the umbrella term multivariate statistics. The first statistic used is Wilk's lambda which is a measure based on the ratio of within-group variation to the overall variation in the data (Shennan 1988:229). This procedure illustrates how significant each group is compared to the group of data as a whole.

The second multivariate statistic used is a pairwise comparison post hoc test which attempts to look at the strength or significance between paired groups. Both the Scheffé and Tukey tests were used, as the former is considered more flexible than the latter (Tabachnick and Fidell 1996), consequently the use and comparison of both would result in a more balanced procedure.

The third multivariate technique used was discriminant analysis which separates data into groups on the basis of a criterion, such as Wilk's lambda, related to the independent variables (in our case x,y coordinates) and then attempts to distinguish these groups based on some dependent variable derived from the data (in our case, clusters) (Davis 1986; Shennan 1988; Tabachnick and Fidell 1996). The results of this analysis are a set of functions derived from the independent variables and subsequently compared with the dependent variable or grouping variable. The functions describe a coordinate space in which observations may be located and which provides a more effective separation of the observations into their a priori groups. This procedure presents important information because it illustrates the strength of the difference between clusters. This provides a short of check for the k-means procedure as it will indicate whether or not the clusters are essentially different and how many groups should really be present based on the strength of this difference.

Statistical Results

The first statistical method used was a k-means cluster analysis which was run in SPSS 9.0 (SPSS 9.0 Reference Guide) as were all other statistical procedures. All x and y (n=1735) co-ordinates consisting of artifacts, bones, bone stains, charcoal and grease stains, and flakes were entered into the program. Visual inspection indicated the presence of six clusters and consequently a maximum of six clusters was chosen in the k-means analysis and resulted in a highly statistically significant score ($p< 0.000$). X and y coordinates of the cluster centers were provided in addition to cluster size, number of cases and type of materials found in each cluster as indicated from Table 5.18 and Figures 5.22 and 5.23

Table 5.18: K-means cluster description

Cluster (center x,y)	Material Number	Description
1 (446, 592)	820	Primarily lithic debitage, artifacts and bone stain
2 (149, 637)	96	Artifacts and bone
3 (363, 422)	317	Primarily bone, grease and bone stain
4 (33, 437)	300	Primarily lithic debitage and artifacts
5 (133, 127)	64	Bone, bone stain and artifacts
6 (409,154)	138	Charcoal, artifacts and bone
Total	1735	

Figure 5.22: K-Means Cluster Centers

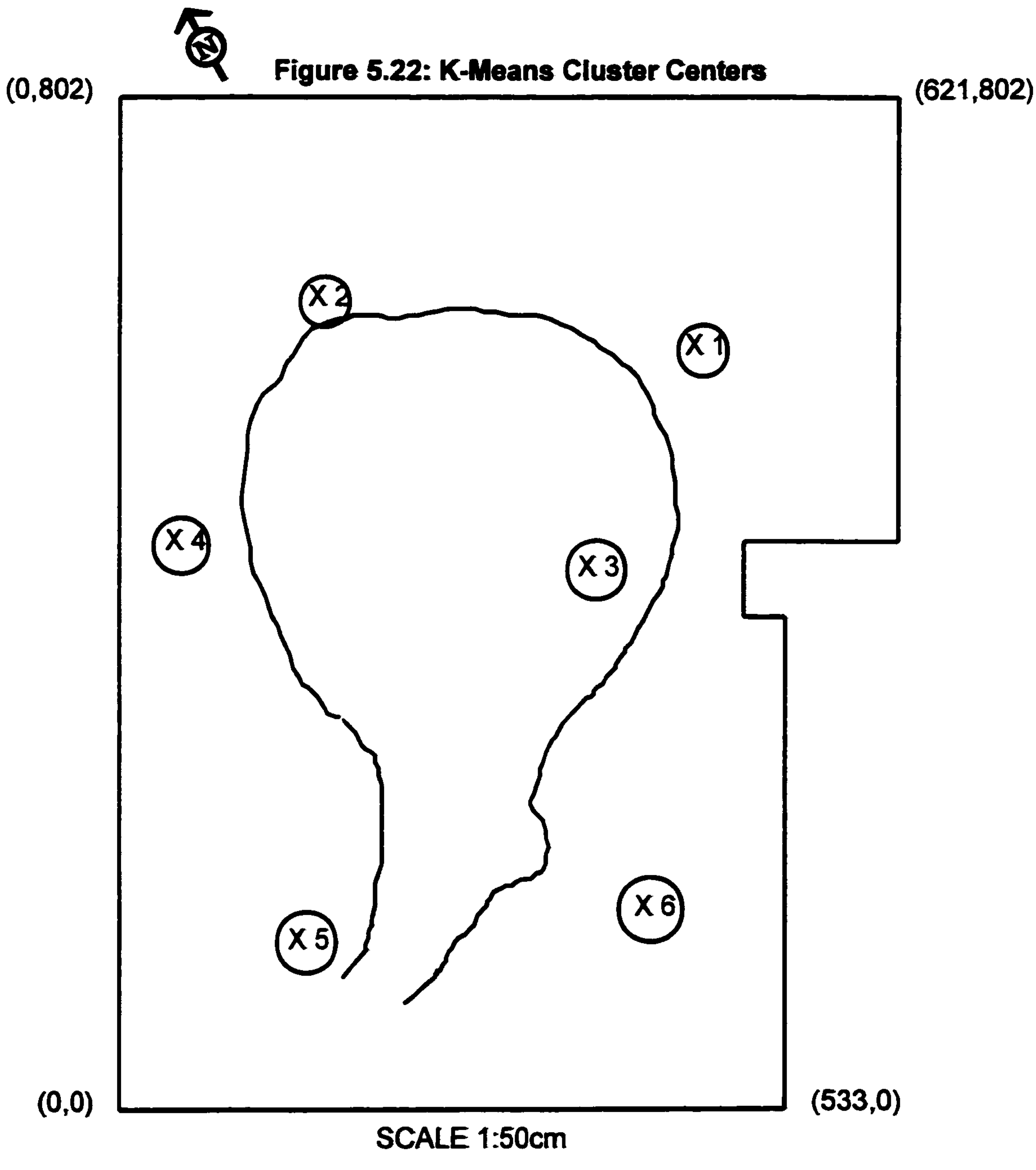
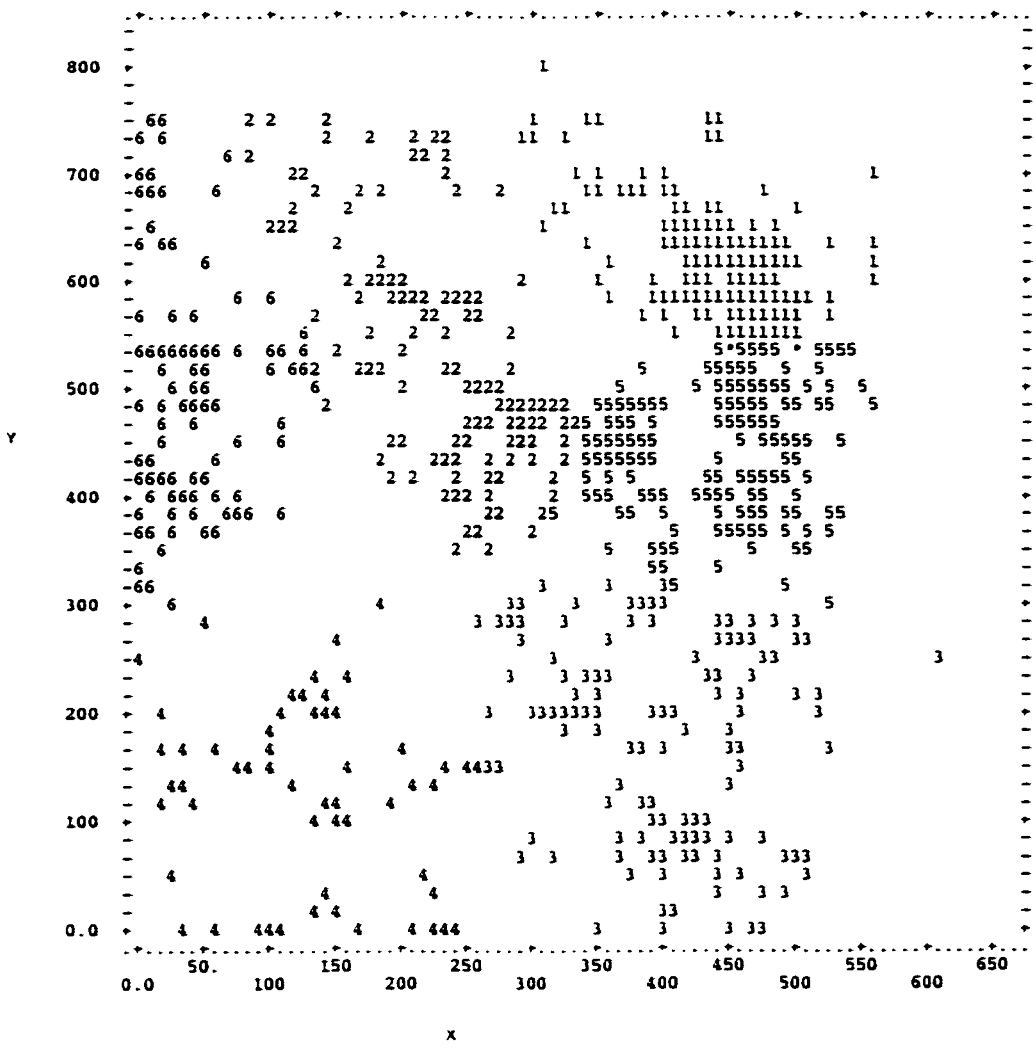


Figure 5.23: K-Means Cluster Graph



Wilk's lambda, which compares within group variation to overall variation in the data, was highly significant ($p < 0.000$) for six clusters with a value of 0.026. This means that the independence of each cluster, based on x and y coordinates, is highly significant. This result re-enforces the results attained from the k-means analysis.

The second set of multivariate statistical methods used were the ad hoc Scheffé and Tukey tests of multiple comparisons or pairwise comparisons between clusters. These tests isolate one cluster and compare it to the remaining five clusters by providing a significance value for each relationship. As the independent variables were represented by x and y, the test was performed on all x coordinates and then on all y coordinates; consequently two sets of significance values are provided. The results using the x-coordinates for both Tukey and Scheffé were, in all cases, highly significant ($p < 0.000$) except for clusters 5 and 2. These two clusters had a significance value of $p < 0.362$ for Tukey and $p < 0.569$ for Scheffé, which indicates that these two clusters are not significantly different in terms of their x coordinate spread (using the widely accepted $p < 0.05$ cut off point). The results using the y coordinates for the Tukey and Scheffé tests indicate a highly significant score $p < 0.000$ for all pairwise groups except clusters 3 and 4 and clusters 5 and 6. Clusters 3 and 4 had a Tukey score of $p < 0.033$ and a Scheffé score of $p < 0.111$. Clusters 5 and 6 had a Tukey score of $p < 0.052$ and a Scheffé score of $p < 0.115$. This indicates that in terms of the y coordinates clusters 3 and 4 and clusters 5 and 6 are not significantly different. This means that clusters 3 and 4 and clusters 5 and 6, were similar in terms of their spread (or shape) along the y-axis. Clusters, are however, similar only if both x and y coordinates are similar and this does not occur.

Discriminant function analysis was performed in order to observe the strength of cluster membership and the separation between clusters. The independent variables were represented by the x and y coordinates, which will result in function(s) based on these two variables and the dependent variable was represented by the six clusters. The procedure produced two functions, the first representing 73.4% of the variance and the second 26.6%. Both functions appeared highly significant with a value of $p <$

0.000. A graph (Figure 5.24), based on canonical discriminant functions, indicates the 'tightness' of a cluster in terms of each function. In reality this graph tells us which clusters have tightly clustered materials and which clusters are more spread out. Finally, a classification matrix or matrix of similarities (Shennan 1988) (Table 5.19) illustrates which clusters had misclassified observations. The classification matrix indicates the relative independence of each cluster, based on x,y coordinates, in terms of one another. Consequently, it appears that the only cluster pair which affects one another is cluster 1 and 3.

Figure 5.24:Canonical Discriminant Functions

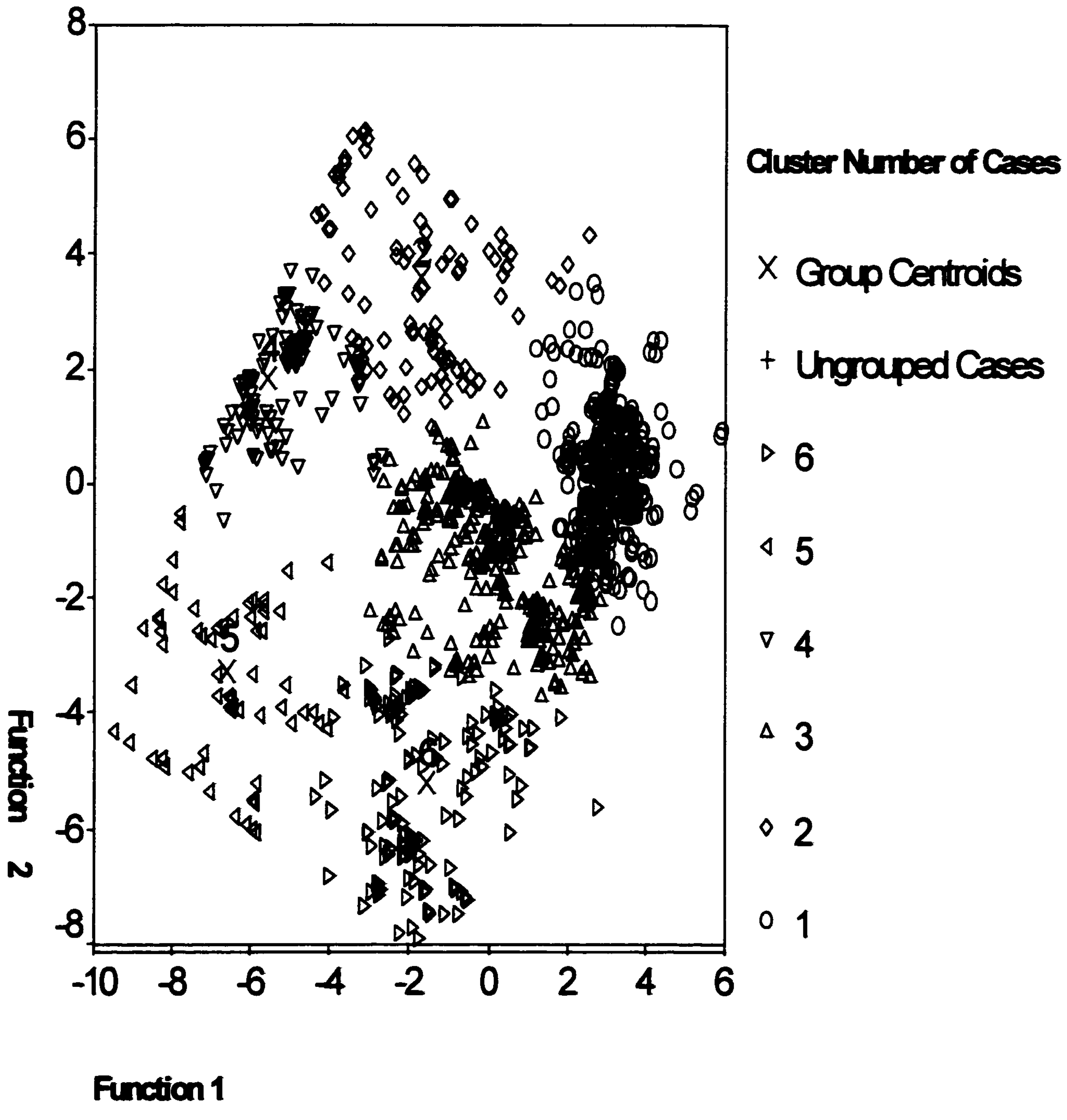


Table 5.19: Classification Matrix

Number of Clusters		Predicted Group Membership						
		1	2	3	4	5	6	Total
Original Count								
	1	820	0	0	0	0	0	820
	2	3	92	0	1	0	0	96
	3	19	1	295	0	0	2	317
	4	0	6	0	294	0	0	300
	5	0	0	0	0	63	1	64
	6	0	0	1	0	0	137	138
%	1	100	0	0.0	0.0	0.0	0.0	100
	2	3.1	95.8	0.0	1.0	0.0	0.0	100
	3	6.0	0.3	93.1	0.0	0.0	0.6	100
	4	0.0	2.0	0.0	98.0	0.0	0.0	100
	5	0.0	0.0	0.0	0.0	98.4	1.6	100
	6	0.0	0.0	0.7	0.0	0.0	99.3	100

Visual Inspection and Statistics: Final Cluster Number

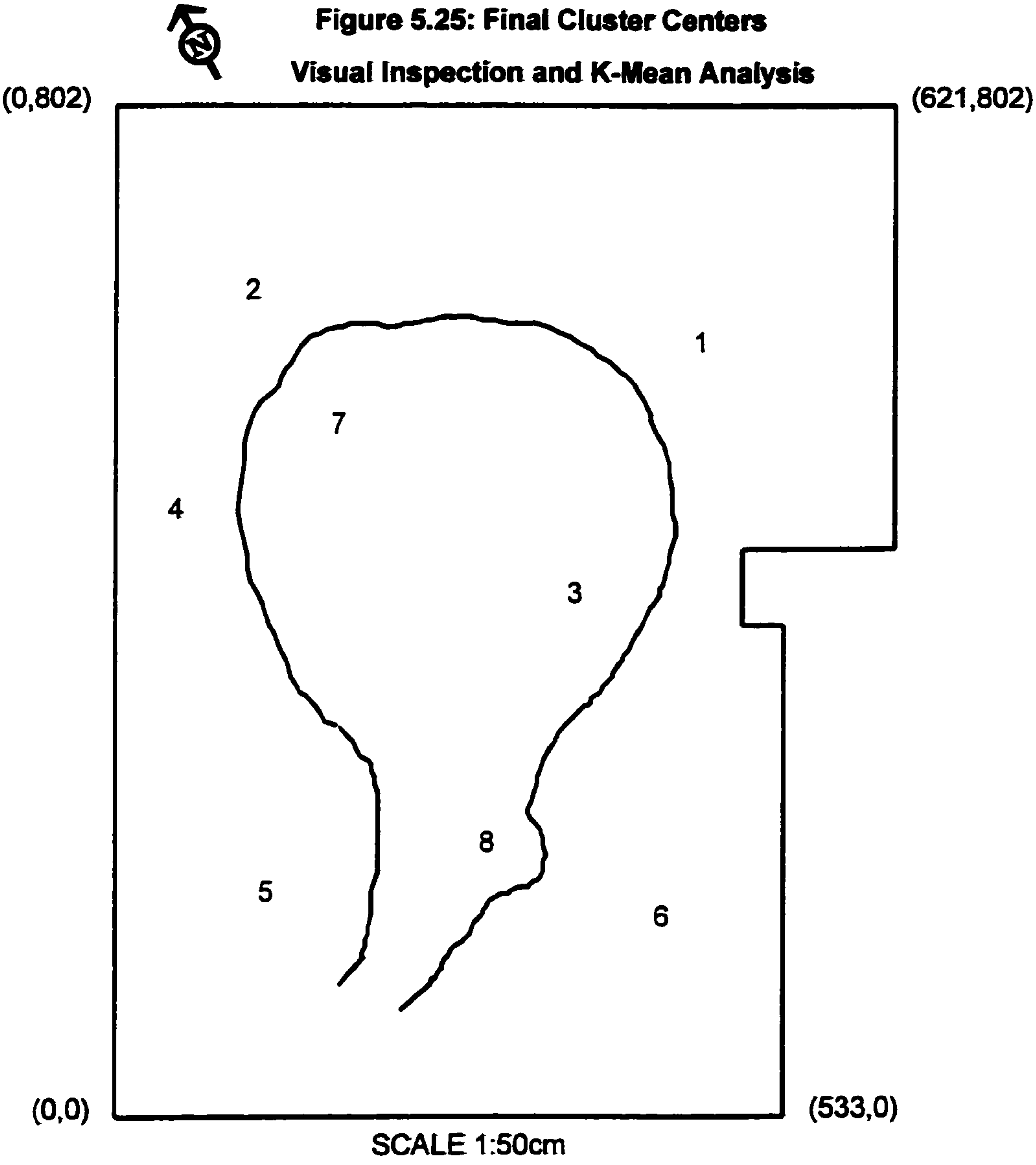
K-means cluster centers illustrates a strikingly similar picture as suggested by visual inspection (Figures 5.18 to 5.23), except for k-means clusters 2, 4 and 6, located in the western and southeastern corners of the excavation. Analysis based on visual inspection divided the area encompassed by clusters 2 and 4 into two distinct clusters, however, these cluster centers were different. K-means cluster 2 consists of visual inspection clusters 2C and 2A. These clusters were first divided with respect to their relative position to the house, which forms a type of 'barrier' between inside and outside the dwelling. The second reason for this division is based on the respective artifact assemblages which are very different (Thule vs. Dorset artifacts). In addition, visual inspection treats part of k-means cluster 2 and all of cluster 4 as one single cluster (2C) (Figures 5.18 to 5.23). Closer inspection, however, indicates that indeed this area should be divided into two clusters and that combining these two clusters as suggested by visual inspection is perhaps erroneous. This is based on the apparent difference in cluster membership (Tables 5.17 and 5.18). A similar scenario exists with cluster 6 as it represents both part of the midden and part of the entrance. Cluster 6 is, therefore, divided into two clusters (6 and 8) based on structural delineation of inside vs. outside. This division, is again based on ethnographic and ethnoarchaeological information indicating that both these clusters represent distinct special purpose areas. Consequently, the use of both visual inspection and k-means cluster analysis reveals the presence of eight clusters (Table 5.20 and Figure 5.25)

Table 5.20: K-means and visual inspection cluster description

Cluster center	Material Number	Original cluster designation and cultural affiliation (Artifact/Structural)
1 (446,592)	820	Visual inspection: 1C and K-means:1 Dorset
2 (60, 697)	60	Visual inspection: 2C and K-means:2 Dorset
3 (363,422)	317	Visual Inspection:1A and K-means:3 Thule
4 (33,437)	300	Visual Inspection:2C and K-means:4 Dorset
5 (133,127)	64	Visual Inspection:3C and K-means:5 Dorset/Thule
6 (409, 154)	111	Visual Inspection: B and K-means:6 Thule
7 (160, 543)	36	Visual Inspection:2A and K-means:2 Thule
8 (318,202)	27	Visual Inspection:3A and K-means:6 Thule
Total	1735	

Figure 5.25: Final Cluster Centers

Visual Inspection and K-Mean Analysis



A simple correlation was performed on the materials found in each cluster in order to ascertain their similarity based on material type (Table 5.21). Categories were separated in terms of species represented, artifact type (Dorset/Thule/ European/Unidentified) and number of bone stains, flakes and charcoal/grease. The table below indicates that a strong correlation exists between clusters 1 and 2; 1 and 4; 2 and 4; 3 and 5; 3 and 6; 3 and 8; 5 and 7; 5 and 8 and 6 and 8

Table 5.21 Cluster Membership Correlation

	C1	C2	C3	C4	C5	C6	C7
C2	**0.736**						
C3	0.196	0.514					
C4	**0.974**	**0.746**	0.051				
C5	0.326	0.354	**0.843**	0.116			
C6	0.063	0.449	**0.914**	-0.046	0.685		
C7	0.586	0.332	0.599	0.393	**0.877**	0.429	
C8	-0.025	0.134	**0.864**	-0.178	**0.718**	**0.756**	0.500

Note: Sample size is n=1735 (includes all archaeological material)
Highlighted numbers indicate a statistically significant correlation.

Summary

This chapter has presented a summary of the data recovered from Structure 1 at JhEv-3. These data can provide the basis for understanding spatial behaviors and activities which occurred in and around this structure. Stratigraphic information indicates the presence of two distinct occupations. Whether these occupations represent two different cultural groups and what can be said about theses groups will be discussed in the subsequent chapter. Information attained from cluster membership, however, strengthens the argument for the presence of two cultures in and around Structure 1. The faunal assemblage indicates a varied diet with an emphasis on small seal and caribou. Visual inspection and statistical analysis suggested the presence of eight distinct clusters which appeared to be separated based on cultural origin. An interpretation of the activities and processes which may have produced such clusters will be outlined in Chapter 6.

Chapter 6: Interpretations and Conclusions

Subsistence and Settlement

Length, Number, Cultural Affiliation, Period, and Season of Occupation

The presence of a single cultural layer inside the dwelling and the presence of a single flagstone floor on top of a sterile beach matrix indicates that Structure 1 represents a single occupation. Interpretation of the latter piece of evidence is based on McGhee's (1984a) conclusion that each flagstone floor represents one period of occupation. In addition, the presence of a sterile beach matrix underneath the floor indicates that a previous occupation did not occur. The duration of occupation, which is taken from the relative thickness of the cultural layer (midden) and the quantity of associated faunal material, indicates that Structure 1 was occupied for a limited time period or by a small group of people for an extended period. Based on previous Thule research, thickness of cultural matrix and size of the associated faunal assemblage appear to represent direct indicators of length of occupation (McGhee 1984a).Though sometimes cultural matrix can be associated with length of occupancy, Stenton and Park (1994) point out that other factors such as number of people and intensity of use may affect the relative thickness of organic deposits.

The high frequency of Dorset artifacts and the relative absence of diagnostic Thule artifacts makes the cultural affiliation of this dwelling suspect. The radiocarbon date (545 ±120 B.P.) indicates that this structure was occupied during the earlier part of the Thule Period (1200-1500 A.D.). However, evidence also suggests that the Dorset occupied southern Hudson Strait until the mid-1500s A.D (Plumet 1979). Therefore cultural affiliation cannot be based on the radiocarbon date alone. Indirect evidence, however, indicates a Thule, rather than Dorset origin for this structure. Two important architectural features present throughout all Dorset prehistory, a rectangular shaped main living room and a paved mid-passage, do not occur in this dwelling. This dwelling, with its oval shape, paved floor areas and rear sleeping platform, is more reminiscent of Thule dwellings (Fitzhugh 1994; Jordan and Kaplan 1980; Mathiassen

1927; Maxwell 1985; Schledermann 1976). Structures which exhibit both Thule and Dorset features (O'Bryan 1953; Plumet 1979; Wenzel 1979) retain either their rectangular shape or their mid-passage; Structure 1, however, does not. In addition, all Dorset artifacts collected were located outside the structure and therefore cannot be convincingly associated with the last occupation. Consequently, by architectural standards this dwelling is of Thule origin.

The second piece of evidence originates from its association with Structure 2 (Figure 2.1), which yielded a similar radiocarbon date of 485±80 BP. Structure 2 has an oval shaped semi-subterranean main living area, a slightly raised sandy rear sleeping platform, and a single paved cold trap entryway and living floor (Corriveau 1998). These features also characterize Structure 1. In addition, stratigraphic profiles, in both houses, suggest a one-time short term occupation of the dwellings (Corriveau 1998). A strong possibility exists that Structure 1 and 2 were occupied contemporaneously. Based on this assumption, the presence of three diagnostic Thule artifacts, consisting of a drilled slate vessel fragment and two miniature soapstone vessels, argues for a Thule origin of Structure 1.

In terms of period of occupation, the radiocarbon date provides a range of 1285 to 1525 A.D. and covers Early and Classic Thule occupation. The absence of a stone supported rear sleeping platform is evidence for Early Thule occupation in the High Arctic, however, this phenomenon also appears in Thule structures from Labrador which are dated between the 13th and 15th century A.D. (Fitzhugh 1994). Consequently, the use of a raised sand platform may be a regional characteristic as opposed to chronological. The period of occupation can only be estimated to have taken place between the Early and Classic Thule periods.

Based on house type, which is semi-subterranean, one can assume that occupation occurred sometime during the cold weather period (October to April/May in Hudson Strait), as this structure is considered a 'cold weather' style dwelling. Park (1988), however, indicates that one can not assume that Thule "Winter

Houses" were always occupied during the cold season based on the amount of time and effort put into house construction. In addition, Park (1988) points out that ethnographic records indicate that semi-subterranean dwellings were sometimes occupied in the summer. Though Park raises an important point, two lines of evidence indicate that this structure was occupied during the cold season. First, in ethnographic accounts, where ethnographers differentiate between cold and warm weather structures, semi-subterranean dwellings are more frequently associated with the former. Second, evidence of tent rings and 'autumn dwellings'(Avataq Cultural Institute Survey 1997; Barré 1970) within the immediate area of the site indicates that alternative seasonal dwellings were used during the Thule period in this area, though there is no certainty that these structures were correlated with Structure 1.

<u>House Construction and Organization</u>

Evidence consisting of upright stones (Figure 5.2) and a lintel indicates that Structure 1 was constructed using the 'cantilever' system as described by Birket-Smith (Figure 4.1). Construction materials most likely consisted of sod and stone. Some wood pieces were present in the entrance passage and living area; however, their size does not indicate their use as a structural material. Though the absence of any large structural material made from wood may indicate it was not used, it can not be ruled out. Ethnographic (Freuchen 1961; Gullov 1997) and ethnoarchaeological (Oswalt and Vanstone 1967) evidence illustrates the importance of wood as it was often scavenged from abandoned dwellings. In addition, the idea that winter dwellings became public property as soon as they were abandoned, increases the likelihood that prized materials, such as wood, were removed (Freuchen 1961;Gullov 1997).

A similar scenario might exist concerning whale bone material around the structure. The presence of three whale skull fragments located next to the walls may suggest that whale bone served some structural and/or symbolic function. Whale skulls were commonly used as wall supports and appear to have served a symbolic function when placed over the entrance passage (Dawson 1998; McCartney 1979). Interestingly, all skull fragments were found adjacent to or in front of the entrance passage. The low frequency of these elements, however, may indicate that whale bone was a seldom used structural resource. This paucity may be explained, as with wood, in terms of its perceived value. Whale bone was highly prized as a structural material and similarly was often removed from abandoned dwellings (Dawson 1998). The presence of whale bone also raises the issue of scavenging vs. active hunting. As indicated by previous research (Freeman 1979; McCartney 1979), the assumption that the presence of structural whale bone material indicates the consumption of whale, is erroneous. Savelle and McCartney (1991; 1994), however, devised a method of distinguishing hunted vs. scavenged whales based on the mortality profiles of a whale bone assemblage. This method relies on (1) a relatively large whale bone assemblage and (2) an assemblage which can be aged. Unfortunately the assemblage from Structure 1 fulfills neither of these criteria. As a consequence, the presence of this material may indicate consumption and/or structural use.

The house entrance, which was oriented in a southeastern direction (towards the sea), was paved and consisted of a cold trap and an associated alcove. This latter feature may have been used as a storage area. The pavement extended into the living area and terminated approximately 1.5 m from the entrance to the structure. The southeastern and southwestern portions of this paved living area consisted of raised stone slabs, that may have functioned as a storage area and kitchen. The remaining portion of the dwelling, located at the back, consisted of a slightly raised platform of sand that would have functioned as a sleeping platform.

The orientation of Structure 1, towards the sea, is consistent with other Thule and Inuit dwellings (Boas 1888; McGhee 1984a). In terms of its construction material, Structure 1 is similar to other ethnographically and archaeologically recorded stone and sod Inuit structures (Burch 1979; Davis 1880; Dawson 1998; Fitzhugh 1994; Freuchen 1961; Giffen 1930; Gulløv 1997; Kaplan 1980; Lund 1916; Mathiassen 1927; Maxwell 1985; McGhee 1978, 1981, 1984a; Nelson 1899; Oswalt 1979; Schledermann 1976; Wenzel 1979). These records also indicate that wood and whale bone were used in Inuit and Thule house construction, although, as stated above, the possibility of post-abandonment factors (e.g. pilfering) results in an incomplete record of their use. The organization of the dwelling, consisting of a cold trap entrance with associated alcove, paved living floor, and raised sleeping platform, can be considered a 'typical' historic Inuit and Thule interior design (Burch 1979; Davis 1880; Dawson 1998; Fitzhugh 1994; Freuchen 1961; Hawkes 1916; Giffen 1930; Gulløv 1997; Kaplan 1980; Lund 1916; Nansen 1893; Nelson 1899; Mathiassen 1927; Maxwell 1985; McGhee 1978, 1984a; Oswalt 1979; Schledermann 1976; Wenzel 1979)

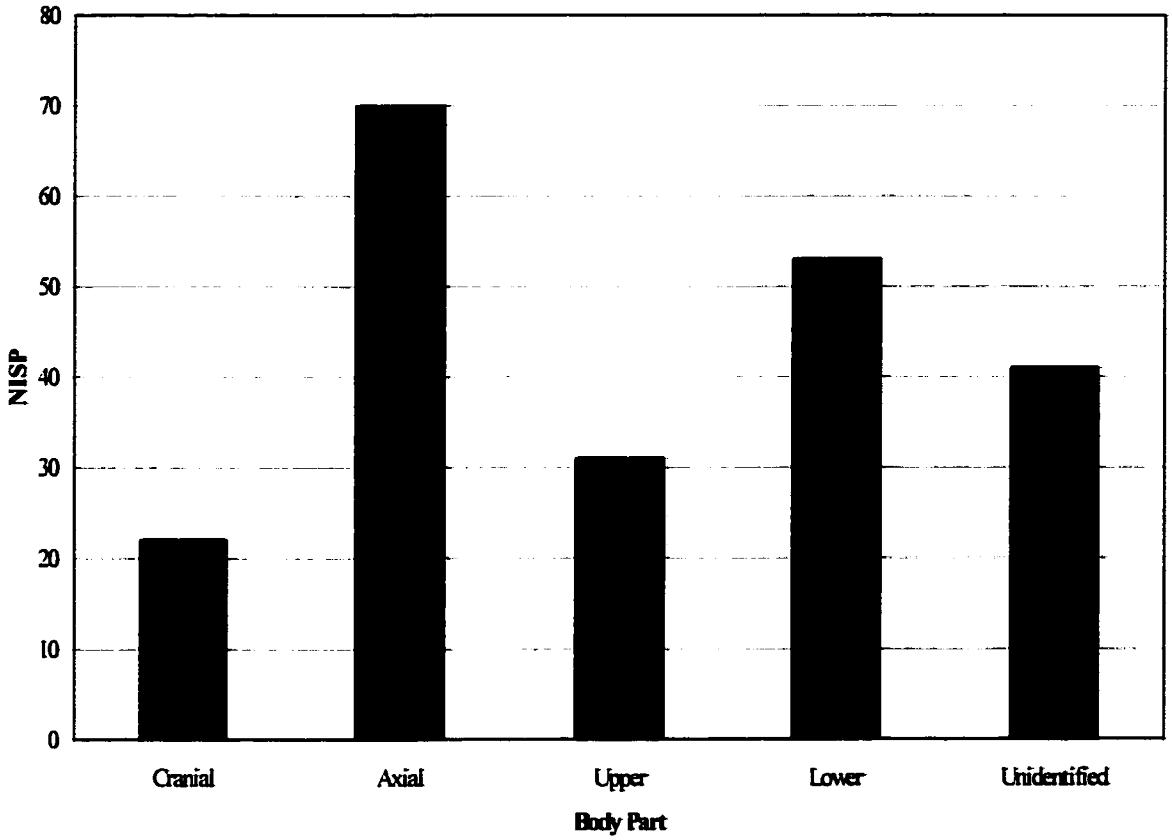
Subsistence Practices and Diet

As hunting equipment and faunal remains represent the main indicators of subsistence practices, this study must rely primarily on the latter, as no such diagnostic artifacts were present in Structure 1. Based on NISP and MNI values small seals (NISP 217, MNI-11 with ringed seal representing 90% and harp seal 10%) represent the largest group of collected specimens, followed in descending order, by caribou (NISP-38, MNI-2), whale (NISP-16, MNI-2), large seal (walrus: NISP-6, MNI-1 and bearded seal: NISP-8 MNI-1), domestic dog (NISP- 4, MNI-1) and arctic fox (NISP-1, MNI-1).

Clusters 1, 2, and 4 are designated 'Dorset' in affiliation based on the presence of Dorset artifacts and clusters 3, 6, 7 and 8 are designated 'Thule' in affiliation based on their presence inside the dwelling and finally cluster 6 is designated 'Thule' based on its relative position to the dwelling. Consequently, subsistence and diet of Structure 1 was based solely on the latter cluster group. However, based on their presence in the Thule cultural matrix (Figure 5.4), some specimens found in the Dorset clusters, consisting of large seal and whale, could be associated with the Thule occupation. As a consequence of this separation it appears that the Dorset assemblage consists primarily of small seal and caribou. This division indicates that the Thule (N=182) and Dorset (N=130) faunal assemblages are similar in number. However, when the two assemblages were compared in terms of the represented species and elements, there appears to be only a slight correlation (Pearson's $r = 0.495$). This weak correlation may indicate that the assemblages from deposited faunal materials were somewhat, but not predictably, similar between Dorset and Thule inhabitants at Assuukaaq Island.

The array of elements present in the small seal assemblage (see Chapter 4) indicates

Figure 6.1: Small Seal Skeletal Representation



that whole carcass transport was practised (Figure 6.1). This is in accord with ethnographic evidence which indicates small seals were usually brought to habitation areas intact. A recent unpublished article by Mark Diab (n.d.) presents a meat utility index and Iñupiat meat preference index or ringed seals. Lyman *et al.* (1992) have provided a similar index for harp seals; however, as the sample is represented predominantly by ringed seal, the former study is more applicable. Diab's utility indices (Figure 6.2) prove an interesting comparison with the total small seal assemblage from Structure 1. The ranked material from clusters 1, 2 and 4 representing the Dorset faunal assemblage indicate that it was negatively correlated with Inupiat meat preference (Pearson's $r = -0.147$) and not very strongly correlated with the meat utility index (Pearson's $r = 0.331$). The ranked material from the Thule clusters 3, 5, 6, 7 and 8 indicate a similar relationship with the meat utility index (Pearson's $r = 0.337$) and similar negative correlation with the Iñupiat preference ranking (Pearson's $r = -0.195$). This indicates that, for both Thule and Dorset occupants of this site, neither meat utility nor meat preference played an important role in food preference and consumption. A similar correlation resulted from Diab's comparison with Thule and historic Inuit faunal assemblages from the Eastern Arctic. The application of the preference ranking index, however, must be viewed with caution, as it was based on Inupiat meat preference, which can not be considered 'universal' to all Inuit cultures.

Caribou, which is the second most abundant species in the faunal assemblage, is represented by a high amount of cranial, lower long bone and unidentified fragments (Figure 6.3). The presence of cranial elements can possibly be explained by the Inuit preference for caribou tongues and brains (Binford 1978; Mathiassen 1927). In addition, the presence of an immature mandible strengthens this argument as immature caribou were valued for their cranial elements (Binford 1978; Mathiassen 1927). The remainder of the assemblage, which consists mainly of long bones and fragmented specimens, may indicate the practice of marrow extraction (Binford 1978). The high frequency of fragmented long bones and the presence of fracture marks on all long bones are typical by-products of this practice (Binford 1978).

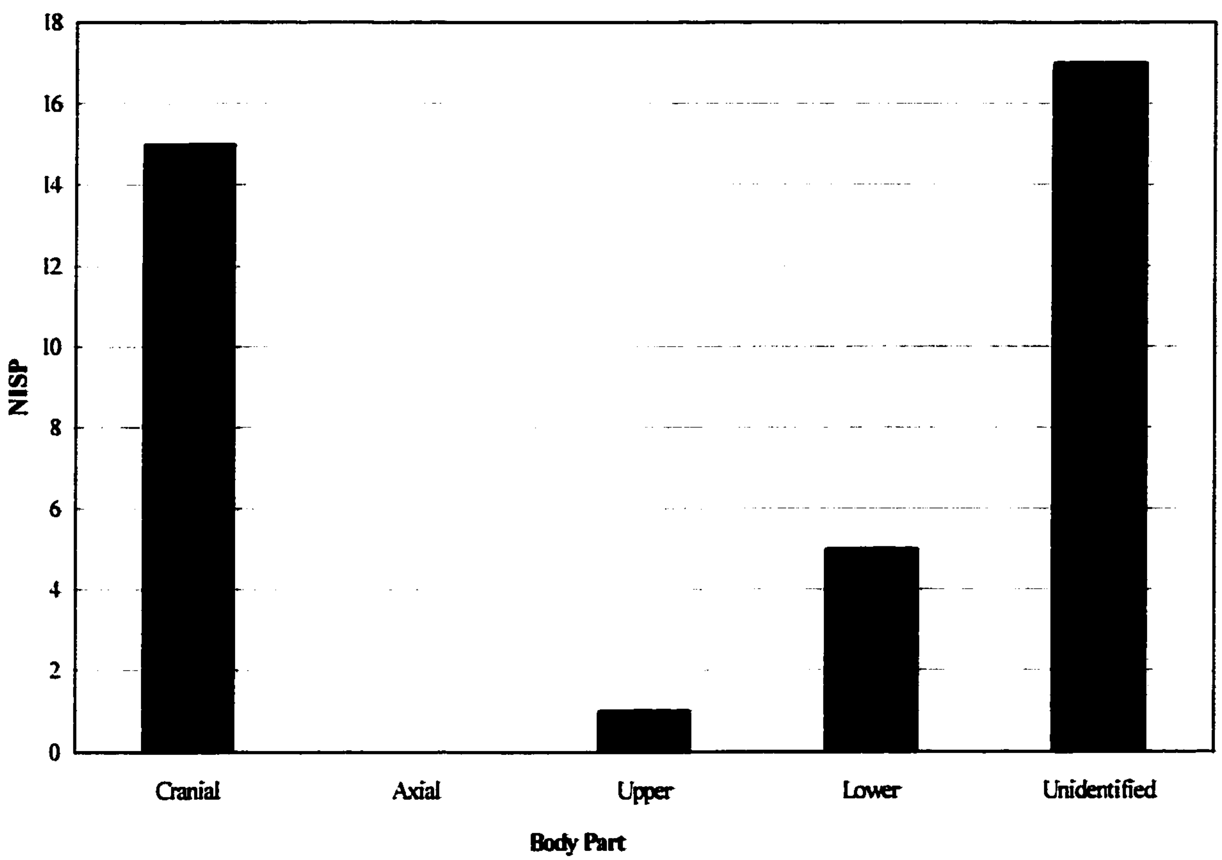
Figure 6.2: Ringed Seal Meat Utility Index and Inupiat Preference Ranking
(taken from Diab, n.d.)

Ringed Seal %MUI, Mean Percent Part Flesh Weight of Gross Carcass Weight, and Inupiat Food Preference Rankings for Three Ringed seals.

Skeletal Part	%MUI	Percent Part Flesh Weight	Inupiat Preference Rankings
Head (and hyoid) (He)	20.67	5.65	No data
Mandibles (Man)*	4.41 (13)†	1.04 (12)†	No data‡
Head (hyoid and mandibles)	25.07 (7)	6.86 (5)	11
Cervical (Ce)	29.47 (4)	8.32 (2)	9
Thoracic (Th)	18.18 (9)	8.04 (3)	8
Lumbar (Lu)	26.56 (6)	7.81 (4)	7
Rib cage (Rib)	100 (1)	26.87 (1)	10
Sternum (St)	3.29 (14)	1.04 (12)	No data
Pelvic girdle (Pel)	29.34 (5)	5.16 (6)	3
Scapula (Sc)	31.37 (2)	4.59 (7)	6
Humerus (Hu)	20.95 (8)	3.23 (9)	5
Radius + Ulna (Ru)	15.45 (10)	2.25 (10)	4
Front flipper (with carpals) (Ffl)	2.86§ (15)		No data
Femur (Fe)	10.18 (11)	1.51 (11)	2
Tibio-fibula (Tf)	29.97 (3)	4.34 (8)	1
Rear flipper (with tarsals) (Rfl)	4.76 (12)		No data

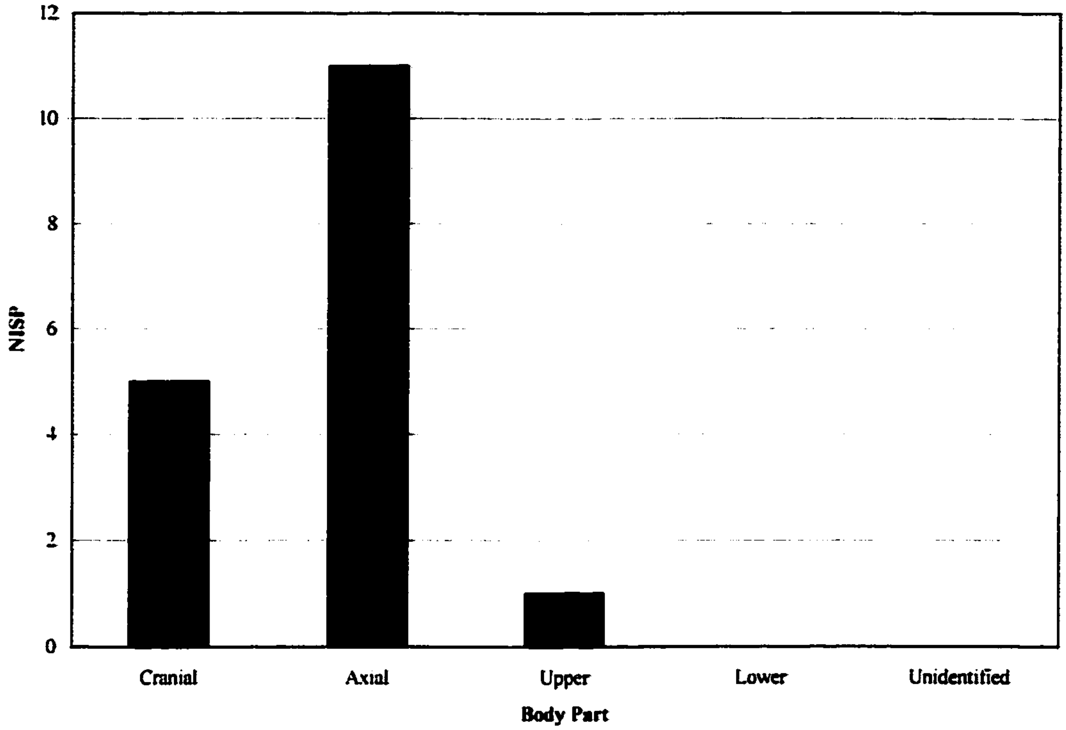
*Specimens #1 and #3 only.
†Numbers in parentheses are rank orders (see also Figure 2).
‡Not ranked separate from head in preference interview
§Specimens number 1 and 3 only. Including skinned weights from specimen number 2 yields a %MUI value of 2.1 which can be used at a researcher's discretion.

Figure 6.3: Caribou Skeletal Representation



The third most abundant group is represented by the cetacean category. As discussed above, the high frequency of cranial and axial elements (Figure 6.4) may provide evidence for structural, rather than dietary, use (McCartney and Savelle 1991; McCartney 1979). As Savelle's (1984) study of an abandoned snow house indicates, however, the absence of whale faunal remains does not always indicate their absence in the diet. Ethnographic evidence collected by Savelle (1984) indicated that beluga meat was consumed in the snow house during the time of occupation. Deposited faunal remains, however, indicated that beluga whale was not consumed. This disparity is, according to Savelle (1984), explained by the way a beluga is prepared, cached and later retrieved. Beluga, which is hunted during the summer, is prepared and cached during this period for the winter and is consequently retrieved during the

Figure 6.4: Whale Skeletal Representation



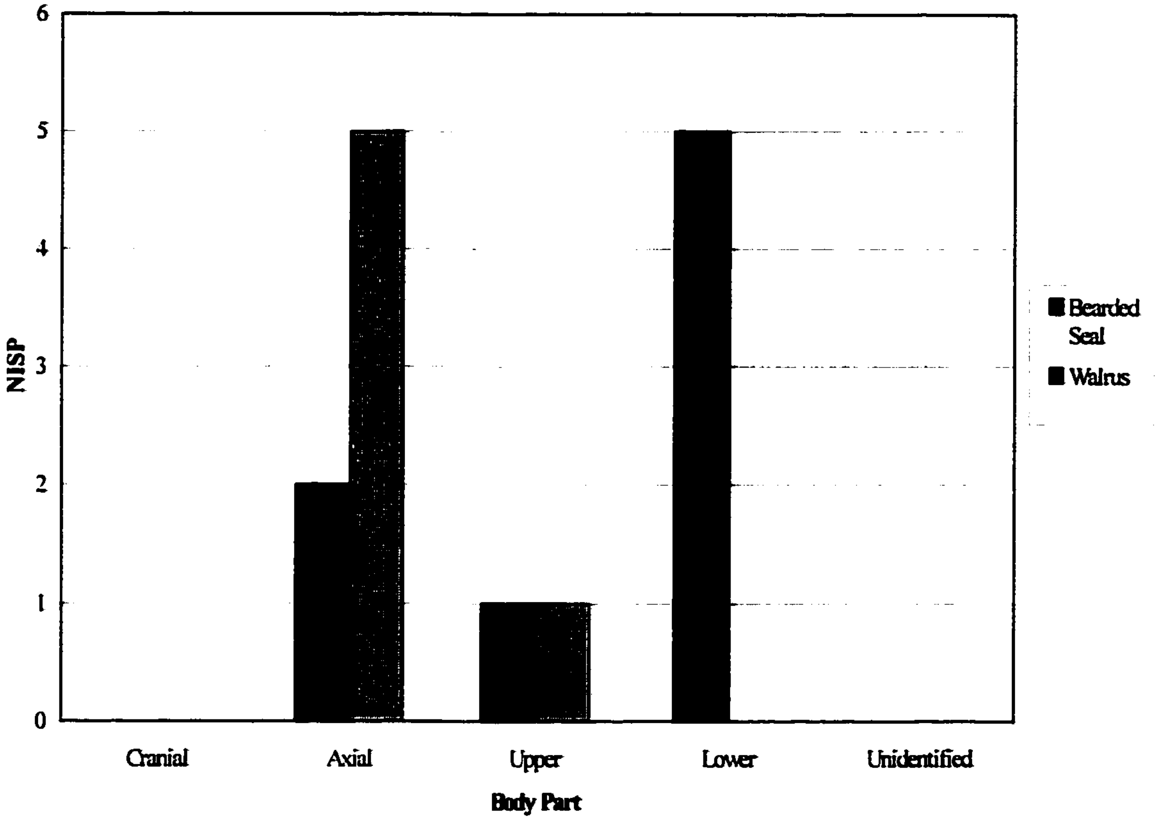
autumn and winter months. The outcome of this preparation is that only the meat and not the bones make their way to habitation sites. The abundance of beluga found in Hudson Strait during the summer season, therefore, makes it plausible to assume that beluga were butchered and the meat stored and only retrieved (without bone) when necessary. Consequently, their relative abundance in the faunal assemblage cannot be directly correlated with their relative importance in the diet.

Element representation within the large seal assemblage (Figure 6.5) indicates that whole carcass transport was not practised, as one would expect for such large animals. The walrus assemblage is represented by caudal vertebrae and a scapula. This indicates that only a small part of the skeleton made its way to this dwelling, and consequently may have been shared with Structure 2. The bearded seal assemblage indicates that more of the carcass was represented at this structure, as suggested by the number and frequency of elements.

The presence of one Arctic Fox may indicate that this animal was exploited as a source of fur for clothing.

Finally, the presence of one domestic dog indicates that these animals were present at this structure which may consequently affect the spatial interpretation of various materials and areas outside the structure. This assumption is based on ethnoarchaeological research (Batram *et al* 1991; Binford 1978; Janes 1983) that

Figure 6.5: Walrus and Bearded Seal Skeletal Representation



suggests dogs alter and even produce distinct spatial patterns throughout a site.

The above faunal information indicates that ringed seal represents the main hunted and consumed animal at Structure 1. As ringed seals are available in this area year-round they must have represented a stable and regular food source. This dietary component is similar to other eastern Arctic Thule faunal assemblages (McCullough 1989; McGhee1984a; Rick 1980) that show a comparable reliance on ringed seal.

Terrestrial animals, that is caribou, account for the second most frequent dietary component, and appear to be consumed similarly in terms of butchery and element preference to ethnographic Inuit cultures (Binford 1978; Boas 1888; Mathiassen 1927). These animals, which were available on the coast until November, could be vigorously hunted throughout the summer and fall and then used as a resource for food and clothing during the winter (Gordon 1887; Payne 1899).

In addition, ethnoarchaeological research indicates that marrow processing of stored caribou meat produces highly fragmented long bone specimens similar to those found at Structure 1. The relatively low position of walrus and whale in the diet may be the result of two factors (1) limited occupation of the structure and (2) butchery, caching and consumption practices resulting in a low bone to meat ratio. The low frequency of bearded seal, however, is more puzzling as this animal is available in large numbers throughout the year (Saladin D'Anglure 1967). In addition, ethnographic records indicate that bearded seal were considered an important source of food for southern Hudson Strait Inuit (Saladin D'Anglure 1967). This disparity might either reveal a change in the subsistence practices between Thule and historic Inuit groups of this area or a change in species availability between these two periods. Finally, the presence of only one Arctic Fox specimen reveals that these animals were not hunted as intensely as compared with other Thule faunal assemblages (McCullough 1989; Rick 1980). This may also indicate that Arctic fox fur did not represent an important material for clothing. This diverse faunal assemblage is typical of other Thule faunal assemblages throughout the eastern Arctic which are represented by a heterogeneous and highly fluid economic base (McGhee 1984a, 1984b; Rick 1980).

Spatial Patterning

The following section will present interpretations resulting from visual inspection and statistical analysis which suggested the presence of eight distinct clusters (Figure 5.25).

House Construction

The materials used for house construction are listed above; however, the clusters surrounding the northern portion of the dwelling (Figure 5.25, clusters 1,2, 4 and 5) indicate that the Thule occupants built on top of an existing a Dorset structure and used this sod for covering the Thule structure. Clusters 1 and 4 are distinct in terms of their high numbers of lithic debitage and low quality Dorset artifacts. In addition, cluster 1 has large quantities of bone stains. These qualities are similar to other middens or debris areas, as outlined in Chapter 5 and, as a consequence, these most likely represent a Dorset midden. This would follow from the assumption that high organic rich areas were used by the Thule for roof covering and that it was often from Dorset structures that this material was obtained. Clusters 2 and 5, however, which are located on the western portion of the excavation, are different from the other two clusters as they consist mainly of high quality Dorset artifacts and a low quantity of faunal material. This may indicate that part of the interior of the Dorset dwelling was excavated for the purpose of roof covering. An alternative scenario might be that as the Thule were refurbishing the existing Dorset dwelling, they might have cleaned out the debris from inside and thrown it in this general area. Ethnographic, ethnoarchaeological and archaeological evidence indicates that refuse areas are usually located in front and adjacent to the structure and not where clusters 1, 2 and 4 are located. Consequently, the faunal materials represented in these clusters are most likely associated with the Dorset occupation.

House construction of Structure 1 incorporates many of the techniques employed by historic Inuit and Thule cultures throughout the eastern Arctic. House reuse appears to have been common practice among both groups and often results in a admixture of material from different cultural groups. However, with the knowledge that this process did occur, one can distinguish between the spatial patterns of this process and subsequent patterns resulting from the period of occupation.

Inside the Dwelling

Activity Areas

Spatial location and frequency of deposited materials set within the structural context of the dwelling reveals the presence of distinct activities occurring within the confines of the house. Cluster 3, which is located on the southeastern portion of the living area, appears to have functioned as a kitchen. The presence of a high quantity of bones, bone stains, and grease stains indicates that cooking was most likely the main activity performed in this area. The presence of a slightly used cooking vessel also strengthens this argument. In addition, the presence of a thick organic rich and 'greasy' dirt just above the paved floor of this cluster, similar to other Thule 'kitchen' areas (Dawson 1998; Giddings 1967; Mathiassen 1927; McGhee 1984; Rick 1980), indicates that cooking was performed here. The greasy underlay, which extends to the limits of the paved floor adjacent to the sleeping platform, may also indicate the position of the soapstone lamp, which was probably fueled by animal fat (seal or whale). In addition, the faunal assemblage from cluster 3 extends next to the sleeping platform and may also represent the practice of 'midnight snacking' as described by Binford (1978,1983). As indicated in Chapter 4, these areas, both next to the door and next to the sleeping platform, are considered 'female' work areas, where women would cook and tend to the lamp, a gendered activity that may have extended into the past.

The southwestern portion of the paved area/or living area is distinct in terms of its structure and the materials collected. Two thick and long rectangular stone slabs were placed perpendicular to one another which created a 'v' shaped bench into the wall of the dwelling. The stone slab may have served as a storage and preparation area for meat, a storage area for tools and hunting equipment, a primary debris area (bones, urine, feces etc.) and perhaps even as a bench. Ethnographic accounts (Chapter 4) indicate that meat was usually cut or prepared in this area and then brought over to the kitchen. Besides this structural distinction, this area was completely devoid of any archaeological material. The reason for the paucity in archaeological material may be due to: (1) use as a storage area and little 'activity' performed here that might have created debris; (2) meat being usually cut off the carcass and then cooked, with bones being placed in the kitchen area first and then brought over to this area; (3) its use as a 'debris' area with preventative and regular maintenance practiced.

The sleeping platform, which is partially surrounded by cluster 7, is distinct in terms of its east/west dichotomy. The eastern portion of the sleeping platform lacks any archaeological material. In contrast, bone stains, bones and organic artifacts are present in the western portion. This indicates that perhaps some type of tool manufacturing was taking place in this portion of the sleeping platform. In addition, the presence of faunal material indicates that eating was occurring in this area. Ethnographic and ethnoarchaeological evidence indicate this area was primarily used by men. Consequently, the deposited material collected in the western portion of the sleeping platform probably represents debris from male Thule activity. Unlike the eastern portion of the dwelling, however, the area in front of the western portion of the sleeping platform was devoid of any faunal material. This may indicate that the eastern side of the sleeping platform was regularly cleaned and the western portion was not. Conversely, the living area indicates that the western area was regularly cleaned; however, the eastern portion was not cleaned at the same rate.

A similar east-west difference exists within the entrance passage. It appears that all activities occurring in the entrance passage were located on the eastern portion. This is probably due to the placement of the alcove, which was ethnographically recorded as being used as a meat storage and debris area. The former use is indicated by the presence of bones, bone stains and some small wood pieces. The latter use is indicated by the presence of grease, charcoal and a broken soapstone vessel. This area may also have been used as a debris area, as it has a similar assemblage to the associated midden. The presence of this primary debris area may also explain the lack of material in the western portion of the living area and consequently illustrate that the entrance alcove, and not the western portion of the living area, was used as a debris area.

The spatial distribution of archaeological material inside Structure 1 indicates that many activities were occurring within specific locales of the dwelling. In accord with other historic Inuit and Thule dwellings, the alcove of the entrance passage was used as a storage and debris area (Boas 1888; Hawkes 1916; McCullough 1989; Morrison 1999; Schledermann 1975; Stefansson 1914; Whitridge 1997). Similarly, the southern portions of the living area directly perpendicular to the entrance commonly served as a kitchen and as a storage facility, as seen in Structure 1 (Barré 1970; Jordan and Kaplan 1980; Maxwell 1985; McCartney 1977; McGhee 1983, 1984a; Morrison 1983; Plumet 1979; Savelle 1984; Schledermann 1975, 1976; Taylor and McGhee 1981; Wenzel 1979). Finally, ethnographic, ethnoarchaeological and archaeological evidence indicates that many activities, such as tool manufacture, eating and tending the soapstone lamp (Balikci 1970; Binford 1978,1983; Birket-Smith 1929, 1945; dePoncins 1943; Freuchen 1961; Giffen 1930; Mathiassen 1927; Maxwell 1985; McCartney 1977; McCullough 1989; Morrison 1983; McGhee 1984a; Saladin D'Anglure 1967; Figure 5.1-5.4), were confined to the sleeping platform. Evidence from Structure 1 appears to affirm that similar activities were performed in and around the sleeping platform.

Maintenance and Cleaning

The presence of areas that are devoid of any archaeological material indicates that some type of regular maintenance was practiced. It appears that the western portion of the living area and the eastern portion of the sleeping platform were regularly cleaned. The presence of some materials on the western portion of the sleeping platform does not mean that it was never cleaned, but probably not as regularly as the other areas. This might, however, have more to do with the intensity of use as opposed to amount of cleaning. If the western side of the sleeping platform was used more intensively, as was the eastern portion of the living area, it may result in a disparity of deposited materials. The fact remains, however, that some type of preventative maintenance (Schiffer 1972, 1987; Stenton and Park 1994) was practiced throughout the dwelling, as indicated from the presence of a midden. This type of preventative maintenance, considered a female responsibility, is typical for most historic Inuit and Thule structures throughout the Arctic (Boas 1888; Binford 1978, 1983; Kaplan 1980; Mathiassen 1927; McCartney 1977; McCullough 1989; McGhee 1984a; Rick 1980; Staab 1979; Stefansson 1914; Stenton and Park 1994). Intensity of maintenance leading up to abandonment, which usually represents the assemblage uncovered by archaeologist, however, appears to be wholly dependant on the type of abandonment that will occur.

Outside the Dwelling

As discussed above, a large portion of the material collected outside the dwelling was associated with the Dorset occupation.

Debris Area

As indicated above, the presence of a midden, designated by cluster 6, indicates that cleaning and maintenance did occur. The placement of the midden relative to the dwelling and materials present in the midden are in line with other ethnographically and archaeologically recorded middens (Thule and historic Inuit) (Binford 1978; Birket-Smith 1929; Graham et al. 1982; Mathiassen 1927; McGhee 1984a; Newell 1987; Oswalt and Vanstone 1967; Stenton and Park 1994; Vanstone 1970). The presence of a similarly associated midden from Structure 2 indicates that this midden was most likely not shared and can be safely associated only with Structure 1. In addition, in order to ascertain the similarity between the dwelling and the associated midden, to indeed tell if the midden was associated with this structure, a test of correlation was performed. This test compared all archaeological material including bones (subdivided by species and element), bone stains, charcoal and grease, artifacts, and lithic debitage. The result of this test illustrated a strong relationship between the two areas (Pearson's $r = 0.866$). Consequently, this indicates that there is a strong likelihood that this midden is indeed associated with Structure 1.

Activity Areas

As is the case with most excavations, the area opened did not allow for the investigation of activities that occurred outside the dwelling (Batram et al. 1991, Newell 1987). Consequently, areas such of the dog yard, kayak and umiak stands and storage areas would not have been uncovered by the excavation as only 1 m below the entrance was exposed. The presence of a modified nail (16^{th}- 18^{th} century), uncovered in the most southern extent of the excavation, indicates that perhaps tool manufacture was performed in this area.

Agents of Spatial Manipulation

The presence of a miniature vessel and three domestic dog bones indicate that the potential for spatial disturbance did exist. As the excavation was not extended very far below the house itself the actual presence and frequency of these processes could not be studied. The fact that no carnivore gnawing was detected on any of the bones indicates that the dogs were probably placed in a dog yard and fed refuse, as is recorded ethnographically (Boas 1888, Mathiassen 1928; Stefansson 1914).

Abandonment

The type of abandonment which appears to have occurred at Structure 1 is similar to that of final planned abandonment as described by Stevenson (1982).The presence of a large clustered amount of bone debris located around the activity area (kitchen) most likely represents the last few meals prepared and consumed by the inhabitants. As the inhabitants knew they were leaving and would not be returning, to this area was left uncleaned for the time just before abandonment. Similar material correlated with such behavior is present in many excavated Thule dwellings (Stenton and Park 1994). The lack of any high quality cached items again indicates that reoccupation was not planned. Both archaeologists and ethnographers discuss the by-products produced from the process of dismantling a sod house in order to acquire important structural materials (Freuchen 1961; Gulløv 1997; Janes 1983; Oswalt and Vanstone 1967). This process usually results in removing sod from the roof and placing it (throwing it) adjacent to the area. The spatial patterning of clusters 1, 2, 4 and 5, which were first acquired from a Dorset structure, are probably the result of this removal. The presence of some small wood splinters may indicate the presence of larger wood pieces which were used for structural pieces and consequently may explain the reason for this dismantling. A different scenario could be argued in which the house was dismantled for plans of return, although the presence of the uncleaned kitchen and the lack of any cached artifacts indicates that this house was stripped of any valuable materials and was not intended to be reused. In addition, the presence of one associated Thule cultural layer and one flagstone floor (McGhee 1984a) indicates that final abandonment was indeed the outcome, as the above materials represent the one and only Thule occupation at this structure.

Summary

Evidence attained from Structure 1 indicates the presence of the Thule culture on Assuukaaq Island between 1250 –1640 A.D. This group constructed and occupied Structure 1 for a limited amount of time. The presence of stone, wood and whale bone, indicates that perhaps all three were used in house construction; however, stone appears to be the main building material. This group appeared, like many Thule groups, to build their dwellings on top of abandoned Dorset structures and use the sod which covered these abandoned structures as materials for their own semi-subterranean winter homes. The season of occupation was probably during the winter and for a very short period of time. This structure was probably occupied in association with Structure 2, as the latter dwelling was inhabited during the same period (1280-1630 A.D.).Based on faunal evidence it appears that this group's diet consisted primarily of ringed seal and caribou, although beluga whale may have been consumed from cached resources. Bearded seal, walrus and bowhead whale appeared to have played a secondary role in the diet. Evidence from the Dorset portion of the excavated area suggests a diet consisting of ringed and harp seal and caribou. The relative reliance on small seal, however, is strikingly similar between Dorset and Thule groups within this area.

Spatial patterning of material inside the dwelling indicates the presence of a storage/debris area located on the eastern portion of the entrance in the alcove. In addition a storage/debris area and bench area, which was consistently cleaned, appears to have been concentrated in the southwestern portion of the house, delineated by a triangular stone slab. Based on the frequency and distribution of archaeological material from the southeastern portion of the dwelling, it appears multiple activities, which consisted primarily of cooking, food preparation, eating in bed and lamp use, were taking place. The activities in this area were performed both from the bed and from the eastern portion of the living area designated the kitchen. The presence of a refuse area indicates that maintenance and discard was practiced; however, other outside activities were not uncovered because of the limited range of excavation. The presence of dogs and children, who are themselves agents of spatial manipulation, would have undoubtedly resulted in the presence of distinct spatial patterning; however, the size of the excavation did not permit this type of investigation. Finally, the spatial patterning, encompassing the total excavated area and the materials present within the site, indicates that final abandonment was planned.

This study indicates the importance of small-scale analysis in Thule archaeology and in archaeology as a discipline. This type of research presents detailed data from specific dwellings and illustrates variation within and among sites. Information of this sort is pertinent in order to built up the necessary knowledge of the variation and complexities present in prehistoric Inuit groups. Spatial analysis is also important as it allows investigation of various types of activities occurring inside and outside a Thule house. These forms of data sets will provide critical information for Arctic archaeology to progress to a level of analysis that views materials, social and symbolic aspects of culture equally and distinctly important.

References

Ackerman, L

1984 Prehistory of the Asian Eskimo Zone. In *Arctic*, edited by. D. Damas, pp.106-118. Handbook of North American Indians, vol. 5, W.C. Sturtevant, general editor. Smithsonian Institute, Washington, D.C.

1990 Gender Studies in Yu'pik Society. *Etudes/Inuit/ Studies* 14(1):209-221.

Alekseev, V. R.; S. A. Arutiunov and D. A. Sergeev

1972 Results of the Historico-Ethnological and Anthropological Studies in the Eastern Chuckee Area. *Inter-Nord* 12: 234-243.

Anderson, D.

1982 Space Use and Site Structure. *Haliksa'I* 1:120-141.

Arnold, C. D.

1986 In Search of the Thule Pioneers. In *Thule Pioneers*, edited by Bielwaski, E., C. Kobelka, and R.R. Janes Occasional Papers of the Prince of Wales Northern Heritage Center No.2.

Auger, R.

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

Balikci, A

1970 *The Netsilik Eskimo*. Natural History Press, New York.

Banfield, A. W. F

1974 *The Mammals of Canada*. University of Toronto Press, Toronto.

Barré, G.

1970 *Reconnaissance archeologique dans la region de la baie Wakeham.*: La societe d'archeologie prehistorique du Quebec, Montreal.

Bell, R.

1884 *Observations on the Geology, Mineralogy, Zoology and Botany of the Labrador Coast, Hudson's Strait and Bay*. Geological and Natural History Survey of Canada, Dawson Brothers, Montreal..

Barrow, J.
1852 *Voyages of Discovery and Research within the Arctic Regions*. Harper and Brothers, New York.

Bartram, L.; E. Kroll and H. Bunn
1991 Variability in Camp Refuse and Bone Food Refuse Patterning at Kua San Hunter-Gatherer Camps. In *The Interpretation of Archaeological Spatial Patterning*, edited by Ellen Kroll and Douglas Price, pp 77-148. Plenum Press, New York.

Behrensmeyer, A. K.
1978 Taphonomic and ecological information from bone weathering. *Paleobiology* 4:150-162.

Binford, L.
1978 *Nunamiut Ethnoarchaeology*. Academic Press, New York.

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

1984 *Faunal Remains from Klasies River Mouth*. Academic Press, Orlando.

Birket-Smith, K.
1924 *Ethnography of the Egedesminde District*. Bianco Lunos, Copenhagen.

1929 *The Caribou Eskimo: Materials and Social Life and Their Cultural Position*. Report of the Fifth Thule Expedition, 1921-1924. Vol. 5(1-2).

1945 *Ethnographical Collections From the Northwest-Passage*. Report of the Fifth Thule Expedition 1921-1924, Volume 6, Number 2. Gyldendalske Boghandel, Nordisk Forlag, Copenhagen.

1959 *The Eskimos*. Methuen and Company. Ltd., London.

Blankholm, H. P.
1991 *Intrasite Spatial Analysis in Theory and Practice*. Aarhus University Press, Aarhus.

Boas, F.
1888 *The Central Eskimo*. Sixth Annual Report of the Bureau of Ethnology, Smithsonian Institution, Washington.

Bodenhorn, B.
1990 "I'm Not the Great Hunter, My Wife Is" Inupiat and Anthropological Models of Gender. *Etudes/Inuit/Studies* 14(1):55-74.

1993 Gendered Spaces, Public Places: Public and Private Revisited on the North Slope of Alaska. In *Landscapes: Politics and Perspectives* edited by. Barbara Bender, pp.169-203. Berg Publishers, Oxford.

Bourdieu, P.
1973 The Berber House. In *Rules and Meanings* edited by. Mary Douglas. Penguin, Harmondsworth and Middlesex.

1977 *Outline of a Theory of Practice*. Cambridge University Press, London.

Burch, E.S., Jr.
1979 The Thule-Historic Eskimo Transition on the West Coast of Hudson Bay. In *Thule Eskimo Culture: An Anthropological Retrospective* edited by A.P. McCartney, pp. 189-211. Mercury Series Paper No. 88, Canadian Museum of Civilization, Archaeological Survey of Canada, Ottawa.

Brain, C. K.
1967 Hottentot food remains and their meaning in the interpretation of fossil bone assemblages. *Scientific Papers of the Namib Desert Research Station* No.32 pp.1-11.

Carr, C.
1984 The nature of organization of intrasite archaeological records and spatial analytic approaches to their investigation. In *Advances in Archaeological Method and Theory* 7:103-222.

1985 Alternative models, alternative techniques: Variable approaches to intrasite spatial analysis. In *For Concordance in Archaeological Analysis: Bridging Data Structure, Quantitative Techniques, and Theory*, edited by C. Carr, pp.236-291.

Coates, Captain W.
1852 The Geography of Hudson's Bay: being The Remarks of Captain W. Coats, In *Many Voyages To That Locality, Between The Years 1727 and 1751*, edited by John Barrow. Hakluyt Society, Volume 11, London.

Collins, H.B.
1932 Prehistoric Eskimo Culture on St. Lawrence Island. *The Geographical Review* 22(1):107-119.

1952 Archaeological Excavations at Resolute, Cornwallis Island, N.W.T. *Annual Report of the National Museum of Canada, 1950-1951, Bulletin* 126:48-63, Ottawa.

1955 Excavations of Thule and Dorset Culture Sites at Resolute, Cornwallis Island, N.W.T. *Annual Report of the National Museum of Canada, 1953-1954, Bulletin* 136:22-35, Ottawa.

Corriveau, C.
1998 Preliminary Report of Fieldwork Archaeological Analysis of Structure 2, JhEv-3, Assuukaaq Island, NWT. Prince of Wales Northern Heritage Centre, NWT

Darwent, C.
1995 Late Dorset Faunal Remains from the Tasiaruluk Site. MA Thesis. Simon Fraser University, Burnaby.

Davis, J.
1880 The voyages and works of... The Navigator, edited by Albert Hastings Markham. Hakluyt Society, London.

Davis, J.C.
1986 *Statistics and Data Analysis in Geology.* Second edition. John Wiley and Sons, New York.

Dawson, P.
1998 *Variability in Traditional and Non-Traditional Inuit Architecture, AD. 1000 to Present.* Unpublished PhD Dissertation, Department of Archaeology, University of Calgary, Calgary.

Dekin, A. A.
1976 Elliptical analysis: An heuristic technique for the analysis of artifact clusters. In *Eastern Arctic Prehistory: Paleoeskimo Problems*, edited by. M. Maxwell, pp. 79-88. Memoir No. 31, Society for American Archaeology.

Department of Environment
1974 Sailing Directions: Labrador and Hudson Bay, Ottawa.

Diab, M.
n.d. Economic Utility of the Ringed Seal (*Phoca hispida*): Implications and Methodological Concerns for Archaeology. Unpublished paper. Department of Archaeology, University of Calgary, Calgary.

Dikov, D.
1979 Drevnie Kul'tur severo-vostochnoi Aziia: Azzia na stykes Amerikoi v drevnosti. Early Cultures of Northeast Asia (Asia Joining America in Ancient Times). Izdatel ' stvo "Nauka", Moscow.

Durkheim, E. and Mauss, M.
1963 *Primitive Classification.* University of Chicago Press, Chicago. (Originally published in 1903).

Dumond, D. E.
1977 *The Eskimos and Aleuts.* Thames and London, London.

Ellis, Henry
1749 A Voyage To Hudson's Bay, by the Dobbs Galley and California in the Years 1746 and 1747, edited by H Whitridge. S.R. Publishers Limited, London.

Enloe, J.G., F. David and F. Hare
1994 Patterns of faunal processing as Section 27 of Pincevent: The use of spatial analysis and ethnoarchaeological data in interpretation of archaeological site structure. *Journal of Anthropological Archaeology* 13: 105-124.

Fienup-Riordan, Anne
1983 *The Nelson Island Eskimo: Social Structure and Ritual Distribution.* Alaska Pacific University Press, Alaska.

1986 The Real People: the concept of personhood among the Yup'ik Eskimos of Western Alaska. *Etudes/Inuit/Studies* 10(1-2):261-270.

1994 *Boundaries and Passages: Rule and Ritual in Yup'ik Eskimo Oral Tradition.* University of Oklahoma Press, Oklahoma.

Fitzhugh, W.W.
1994 Staffe Island 1 and the Northern Labrador Dorset-Thule Succession. In *Threads of Arctic Prehistory: Papers in honour of William E. Taylor, Jr* edited by David Morrison and Jean-Luc Pilon, pp. 239-268. Mercury Series Paper 149, Canadian Museum of Civilization, Archaeological Survey of Canada, Ottawa

Fox, C.
1943 *The personality of Britain.* National Museum of Wales, Cardiff.

Freeman, M.
1979 A Critical View of Thule Culture and Ecological Adaptation. In *Thule Eskimo Culture: An Anthropological Retrospective* edited by A. P. McCartney, pp. 278-285. Mercury Series Paper No. 88, Canadian Museum of Civilization. Archaeological Survey of Canada, Ottawa.

Freuchen, Peter
1961 *Book of Eskimos.* Nelson, Foster and Scott Ltd., Ottawa.

Frobisher, Martin
1867 The Three Voyages of Martin Frobisher: In Search of a Passage to Cathaia and India By The North-West, A.D. 1576-8, edited by. R. Collinson. Hakluyt Society, Volume 38, London.

Generic CADD 6.0
1992 Reference Guide. Autodesk Retail Products, Washington.

Giddings, J. L.
1967 *Ancient Men of the Arctic*. University of Washington Press, Seattle.

Giffen, Naomi M.
1930 *The Roles of Men and Women in Eskimo Culture*. The University of Chicago Press, Chicago.

Gilbert. A. S. and P. Steinfeld
1977 Faunal remains from Dinkha Tepe, Northwestern Iran. *Journal of Field Anthropology* 4:329-351.

Godfrey, W.E.
1966 *The Birds of Canada*. Minister of Supply and Services Canada, Ottawa.

Goffman, E.
1959 *The Presentation of Self in Everyday Life*. Doubleday Press, New York.

Gordon, A.
1887 Report of the Hudson Bay Expedition of 1886 under the Command of Lieutenant A. R. Gordon, R.N. Geological Survey of Canada, Ottawa.

Gould, R. A. and Yellen, J. E.
1987 Man the Hunted: Determinants of Household Space in Desert and Tropical Foraging Societies. *Journal of Anthropological Archaeology* 6:77-103.

Graham, M., C. Raish, and L.Sebastian
1982 Site Structure and Nunamiut Ethnoarchaeology. *Haliksa'I* (1):110-119.

Grayson, D. K.
1984 *Quantitative Zooarchaeology*. Academic Press, New York.

Griaule, M.
1954 The Dogon. In *African Worlds*, edited by Daryll Forde, pp.83-110. Oxford University Press, London.

Guemple, L.
1986 Men and women, husbands and wives: the roles of gender in traditional Inuit society. *Etudes/Inuit/Studies* 10 (1-2):9-24.

Gulløv, Hans Christian
1997 From Middle Ages to Colonial Times: Archaeological and ethnohistorical studies of The Thule culture in South West Greenland 1300-1800 AD. *Meddelelser om Gronland: Man and Society* 23, 1997.
Hall, E.T.
1974 *Handbook for Proxemic Research.* Society for the Anthropology of Visual Communication, Washington, D.C.

Hawkes, E.W.
1916 *The Labrador Eskimo.* Memoir 91, No.14 Anthropological Series. Department of Mines, Geological Survey, Ottawa.

Hillaire-Marcel, C.
1979 Les mers post-glaciaires du Québec:quelques aspects. Thèse de doctorat d'état ès-Sciences naturelles présenté a l''Université Pierre et Marie Curie, Paris.

Hillier, B. and J. Hanson
1984 *The Social Logic of Space.* Cambridge University Press, London.

Hillier, B., A. Leaman, P. Stansall and M. Bedford.
1976 Space Syntax. In *Environment and Planning B.* Volume 3: 147-185.

Hodder, I. and C. Orton
1976 *Spatial Analysis in Archaeology.* Cambridge University Press, Cambridge.

Hodson, F. R.
1971 Numerical typology and prehistoric archaeology. In *Mathematics in the Archaeological and historical sciences*, ed. F. R. Hodson et al., pp. 30-45. Edinburgh University Press, Edinburgh

Janes, R.R.
1983 *Archaeological Ethnography Among Mackenzie Basin Dene, Canada.* The Arctic Institute of North America Technical Paper, No.28, Calgary.

Jenness, Diamond
1991 *The Arctic Odyssey: The Diary of Diamond Jenness, Ethnologist with the Canadian Arctic Expedition In Northern Alaska and Canada, 1913-1916,* edited by Stuart E. Jenness. Canadian Museum of Civilization, Ottawa.

Johnson A. E. and A. S. Johnson
1975 K-means and temporal variation in Kansas City Hopewall ceramics. *American Antiquity* 40:283-295.

Jordan R. H. and S. A. Kaplan
1980 An archaeological view of the Inuit/European contact period in Central Labrador. *Études/Inuit/Studies* 4(1-2): 35-45.

Kaplan, S.
1980 Neo-Eskimo Occupations of the Northern Labrador Coast. *Arctic* 33(3): 646-658.

Kasper, J.C.
1980 *Skeletal Identification of California Seal Lions and Harbor Seals for Archaeologists.* Ethnic Technology Notes 17, San Diego Museum of Man, San Diego.

Kent, S.
1984 *Analyzing Activity Areas: An Ethnoarchaeological Study of the Use of Space.* University of New Mexico Press, Albuquerque.

1987 *Method and Theory for Activity Area Research.* Columbia University Press, New York.

Keeley, L .H.
1991 Tool use and spatial patterning: Complications and solution. In *The Interpretation of Archaeological Spatial Patterning,* edited by E. M. Kroll and T. D. Price, pp.257-268. Plenum Press, New York

King, J
1983 *Seals of the World.* Comstock, New York.

Kintigh, K. W. and A.J. Ammerman
1982 Heuristic Approaches to Spatial Analysis in Archaeology. *American Antiquity* 47(1):31-63.

Klein, R. G. and Cruz-Uribe, K.
1984 *The Analysis of Animal Bones from Archaeological Sites.* University of Chicago Press, Chicago.

Koetje, T. A.
1987 *Spatial Patterns in Magdalenian Open Air Sites from the Isle Valley, Southwestern France.* BAR International Series 346, Oxford.

Kroll, E. M. and T. D. Price (eds.)
1991 *The Interpretation of Archaeological Spatial Patterning.* Plenum Press, New York.

Lawrence D. L. and Low, S. M.
1990 The Built Environment and Spatial Form. *Annual Review of Anthropology* 19:453-505.

Leach, E.
1978 Does Space Syntax Really Constitute the Social. In *Social Organization and Settlement* edited by D. Green, C. Haselgrove, M. Spriggs (Part 2), pp. 343-385. BAR International Series 47(ii).University of Chicago Press, Chicago.

Legge A. J., and P.A. Rowly-Conwy.
1985 *Star Carr Revisited.* Academic Press, New York.

Levi-Strauss C.
1963 *Structural Anthropology.* Translation. C. Jacobson. Doubleday Anchor Books, Garden City.

Linnamae, U.
1975 *The Dorset Culture: A Comparative Study In Newfoundland and the Arctic.* Technical Paper Number 1. Newfoundland Museum, St. John's.

Low, A. P.
1896 Report on a Traverse of the Northern Part of the Labrador Peninsula between Richmond Gulf and Ungava Bay. Geological Survey of Canada, Ottawa.

1897 Report on the Explorations in the Labrador Peninsula along the East Main, Koksoak, Hamilton and Manicuagan and portions of other rivers. Geological Survey of Canada, Ottawa.

1898 Report on an Exploration of Part of the Southern Shore of Hudson Strait and of Ungava Bay. Geological Survey of Canada, Ottawa.

Lund, C.
1916 Indberetning til Kong Frederik III om David Danells tre Rejser til Gronland 1652-1654. Edited by Louis Bobe. Danske Magazin. 6^{th} series, vol.II, .

Lyman, R.L.
1994 Quantitative Units and Terminology in Zooarchaeology. *American Antiquity* 59(1), 36-71.

and J. M. Savelle and P. Whitridge
1992 Derivation and Application of a Meat Utility Index for Phocid Seals. *Journal of Archaeological Science* 19(5): 531-555.

MacLaren Atlantic
1978 Report on Aerial Surveys 77-2, 77-3, 77-4 Studies of Seabirds and Marine Mammals in Davis Strait, Hudson Strait and Ungava. MacLaren Ltd., Moncton.

Malaurie, J.
1956 *The Last Kings of Thule: A Year Among the Polar Eskimos of Greenland.* George Allen and Unwin Ltd., London.

Mathiassen, T.
1927 *Archaeology of the Central Eskimo*. Report of the Fifth Thule Expedition. Volume 4.

1928 *Material Culture of the Iglulik Eskimos*. Report of the Fifth Thule Expedition 1921-1924, Volume 6(1).

Mauss, M. in collaboration with Henri Beauchat
1979 *Seasonal Variations of the Eskimo : A Study in Social Morphology*. Routledge and Kegan Paul, London.

Maxwell, M. S.
1981 A Southeastern Baffin Island Thule House With Ruin Island Characteristics. *Arctic*, 34(2):133-140.

1984 Pre Dorset and Dorset Prehistory of Canada. In *Arctic*, edited by. D. Damas, pp.359-368. Handbook of North American Indians, vol. 5, W.C. Sturtevant, general editor. Smithsonian Institute, Washington, D.C.

1985 *Prehistory of the Eastern Arctic*. Academic Press, New York.

McCartney A.P.
1977 *Thule Eskimo Prehistory Along Northwestern Hudson Bay*. Mercury Series No.70, National Museum of Man. Archaeological Survey Canada, Ottawa.

1979 A Processual Consideration of Thule Whale Bone Houses. In *Thule Eskimo Culture: An Anthropological Retrospective* edited by A. P. McCartney, pp. 301-324. Mercury Series Paper No. 88, Canadian Museum of Civilization. Archaeological Survey of Canada, Ottawa.

1980 The Nature of Thule Eskimo Whale Use. *Arctic* 33(3): 517-541.

and J. Savelle
1985 Thule Eskimo Whaling in the Central Canadian Arctic. *Arctic Anthropology* 22(2): 37-58.

1991 Bowhead Whale Bones and Thule Eskimo Subsistence-Settlement in the Central Canadian Arctic. *Polar Record* 29(168):1-12.

McCullough, K. M.
1988 Neo-Eskimo Diet and Hunting Strategies on Eastern Ellesmere Island NWT, Canada. In *Diet and Subsistence: Current Archaeological Perspectives* eds. B. V. Kennedy and G. M .LeMoine., pp.190-206. Proceedings of the 19th Annual Chacmool Conference, University of Calgary, Calgary.

1989 *The Ruin Islanders: Early Thule Pioneers in the Eastern High Arctic.* Mercury Series Paper 141. Canadian Museum of Civilization, Archaeological Survey of Canada, Ottawa.

McGhee, R .J.
1969/70 Speculations on Climatic Change and Thule Culture Development. *Folk* 11-12: 153-184.

1978 *Canadian Arctic Prehistory.* Van Norstrand Reinhold, Toronto.

1981 *The Dorset Occupations in the Vicinity of Port Refuge, High Arctic Canada*, Mercury Series, No.92. National Museums of Canada, Archaeological Survey of Canada, Ottawa.

1984a *The Thule Village at Brooman Point, High Arctic Canada.* Mercury Series, No.125. National Museum of Canada, Archaeological Survey of Canada, Ottawa.

1984b Thule Prehistory of Canada. In *Arctic,* edited by. D. Damas, pp.369-376. Handbook of North American Indians, vol. 5, W.C. Sturtevant, general editor. Smithsonian Institute, Washington, D.C.

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

and J. Tuck
1982 Un-dating the Canadian Arctic. In *Eastern Arctic prehistory: Paleoeskimo problems* edited by . M. S. Maxwell, pp.6-14. Memoir No. 31. Society for American Archaeology, Washington.

Moore, H. L.
1986 *Space, Text and Gender: An Anthropological Study of the Marakwet of Kenya.* Cambridge University Press, Cambridge.

Morrison, D.A.
1983 *Thule Culture in the Western Coronation Gulf, N.W.T.* Mercury Series 116. National Museum of Canada, Archaeological Survey of Canada, Ottawa.

1988 *The Kugaluk Site and the Nuvorugmiut*. Mercury Series 137. National Museum of Canada, Archaeological Survey of Canada, Ottawa.

1999 The Earliest Thule Migration. *Canadian Journal of Archaeology* 22(2): 139-156.

Nagle, C. L.
1986 Flaked Stone Procurement and Distribution in Dorset Culture Sites Along the Labrador Coast. In *Palaeo-Eskimo Cultures in Newfoundland, Labrador and Ungava*, pp.95-110. Reports in Archaeology No.1, Memorial University of Newfoundland, St. John's.

Nansen, F.
1893 *Eskimo Life*. Longmans, Green and Company, London.

Nelson, E.W.
1899 *The Eskimo about Bering Strait*. Eighteenth Annual Report of the Bureau of American Ethnology, 3-518. Smithsonian Institution, Washington.

Newell, R.
1987 Reconstruction of the Partitioning and Utilization of Outside Space in a Late Prehistoric/Early Historic Inupiat Village. In *Method and Theory for Activity Area Research* edited by. Susan Kent, pp.64-106. Columbia University Press, New York.

O'Bryan, D.
1953 Excavations of a Cape Dorset Eskimo House Site, Mill Island, West Hudson Strait. *Annual Report of the National Museum of Canada, Bulletin* 128:40-57. Ottawa

O'Connell, James F.
1995 Ethnoarchaeology Needs a General Theory of Behavior. *Journal of Archaeological Research* 3(5): 205-255.

Olsen, S.J.
1973 *Mammal Remains from Archaeological Sites*. Papers of the Peabody Museum of Archaeology and Ethnology, Vol. 56, No. 1. Harvard University, Cambridge.

Oswalt, Wendell H.
1979 *Eskimos and Explorers*. Chandler and Sharp Publishers, California.

Oswalt, W.R. and J. W. Vanstone
1967 *The Ethnoarchaeology of Crow Village, Alaska.* Smithsonian Institute, Bureau of American Ethnology, Bulletin 199, Washington.

Park, R.
1988 "Winter Houses" and Qarmat in Thule and Historic Inuit Settlement Patterns: Some Implications for Thule Studies. *Canadian Journal of Archaeology* 12:163-175.

1993 The Dorset-Thule succession in Arctic north America: assessing claims for culture contact. *American Antiquity* 58(2):203-234

1994 Approaches to dating the Thule culture in the eastern Arctic. *Canadian Journal of Archaeology* 18:29-48.

1997 Thule Winter Site Demography in the High Arctic. *American Antiquity* 62(2):273-284.

1998 Size counts: the miniature archaeology of childhood in Inuit societies. *American Antiquity* 72: 269-281.

Parker Pearson, M. and C. Richards
1994 Ordering of the World: Perceptions of Architecture, Space and Time. In *Architecture and Order* edited by. Michael Parker Pearson and Colin Richards, pp1-37.Routledge, London.

Parry, William. E.
1824 Journal of the Second Voyage for The Discovery of a North-West Passage from the Atlantic to the Pacific; Performed in the Years 1821-1822-1823, in His Majesty's Ships Fury and Hecla, under the order of Captain William Edward Parry. John Murray, London.

Payne, F.F.
1887 Flora and Fauna of Prince of Wales Sound, Hudson Strait. In Report of the Hudson Bay Expedition of 1886 under the Command of Lieutenant A.R. Gordon, R.N., edited by A. R. Gordon. Geological Survey of Canada, Ottawa.

1899 Eskimo of the Hudson's Strait. Extract from Proceedings of the Canadian Institute. Copp Clark Company Limited, Toronto.

Petragalia, M.D., K. Akoshima and L. G. Strauss
1994 Interpreting the formation of the Abri Dufaur: An Upper Paleolithic site in southwestern France. *Journal of Anthropological Archaeology* 13: 139-151.

Plumet, P.
1977 Le peuplement préhistorique du Nouveau-Québec-Labrador. *Géographie physique et Quartenaire* 31(1):185-199.

1979 Thuléens et Dorsétiens dans l'Ungava (Nouveau Québec). In *Thule Eskimo Culture: An Anthropological Retrospective* edited by A.P. McCartney, pp.110-121. Mercury Series 88. National Museum of Man, Archaeological Survey of Canada, Ottawa.

1981 Matière premières allochtones et réseau spatial paléoesquimau en Ungava occidental, Arctique Québecois. *Géographie physique et Quartenaire* 35(1):5-17.

1985 *Archéologie de l'Ungava: le site de la Pointe aux Bélougas(Qilalugarsiuvik) et les maisons longues dorsétiennes.* Paléo-Québec 18. Labratoire d'archéologie, Université du Québec, Montréal.

1989 Thuléens et Dorsétiennes a l'ile d'Amittualujjuaq, baie du Diana, Arctique québécois. *Géographie physique et Quartenaire* 43(2):207-221.

1994 Le Paléoesquimau dans la baie du Diana (arctique québécois). In *Threads of Arctic Prehistory: Papers in honour of William E. Taylor, Jr* edited by David Morrison and Jean-Luc Pilon, pp.87-102. Mercury Series Paper 149. Canadian Museum of Civilization, Archaeological Survey of Canada, Ottawa.

and P. Gangloff
1990 *L'Archéologie et l'ethnohistoire de l''Ungava Oriental.* Paléo-Québec 19, Presses de L'Université du Québec, Québec.

dePoncins, G.
1943 *Kabloona.* Garden City Publishing, New York.

Portnoy, A.
1981 A Microarchaeological View of Human Settlement Space and Function. In *Modern Material Culture: The Archaeology of Us* edited by R.A. Gould and M. Schiffer, pp.213-224. Academic Press, New York.

Preston Blier, S.
1987 *The Anatomy of Architecture: Ontology and Metaphor in Batammaliba Architectural Expression.* Cambridge University Press, Cambridge.

Rasmussen, K
1931 *The Netsilik Eskimo: Social Life and Spiritual Culture.* Report of the Fifth Thule Expedition, 1921-24, Vol. 8., Copenhagen.

Rick, A.M.
1980 Non-cetacean Vertebrate Remains from Two Thule Winter Houses on Somerset Island. *Canadian Journal of Archaeology* 4:99-117.

Rigaud, J and Simek, J.F.
1991 Interpreting Spatial Patterns at the Grotte XV: A Multiple-Method Approach. In *The Interpretation of Archaeological Spatial Patterning*, edited by Ellen Kroll and Douglas Price(eds.) pp. 199-220. Plenum Press, New York.

Saladin d'Anglure, Bernard
1963 Discovery of Petroglyphs near Wakeham Bay. *Arctic Circular* 15(1): 6-13.

1967 *L'Organisation Sociale Traditionelle Des Esquimaux De Kangirsujuaaq (Nouveau Quebec)*. Centres D'Etudes Nordiques, Travaux Divers 17. Université Laval, Quebec.

Savelle, J.M.
1984 Cultural and Natural Formation Processes of a Historic Inuit Snow Dwelling Site, Somerset Island, Arctic Canada. *American Antiquity* 49(3): 508-524.

and A.P. McCartney
1988 Geographic and Temporal Variation in Thule Eskimo Subsistence Economies: A Model. *Research in Economic Anthropology* 10:21-72.

1991 Thule Eskimo Subsistence and Bowhead Whale Procurement. In *Human Predators And Prey Mortality*, edited by M.C. Stiner. pp.201-216. Westview Press, Colorado.

1994 Thule Inuit Bowhead Whaling: A Biometrical Analysis. In *Threads of Arctic Prehistory: Papers in honour of William E. Taylor, Jr* edited by David Morrison and Jean-Luc Pilon, , pp.281-310, Mercury Series Paper 149.Canadian Museum of Civilization, Archaeological Survey of Canada, Ottawa

Schiffer, M. B.
1972 Archaeological context and systemic context. *American Antiquity* 37(1):156-165.

1987 *Formation Processes of the Archaeological Record*. University of New Mexico Press, Albuquerque.

Schledermann, P.
1975 *Thule Eskimo Prehistory of Cumberland Sound, Baffin Island Canada*. Mercury Series No. 38. National Museums of Canada, Archaeological Survey of Canada, Ottawa.

1976 The Effect of Climate/Ecological Change on the Style of Thule Culture Winter Dwellings. *Arctic and Alpine Research* 8(1):37-47.

1990 *Crossroads to Greenland: 3000 years of Prehistory in Eastern High Arctic.* Komatik Series, No. 2. The Arctic Institute of North America, University of Calgary, Calgary.

and K. McCullough
1980 Western Elements in the Early Thule Culture of the Eastern High Arctic. *Arctic* 33:833-841.

Shennan, S.
1988 *Quantifying Archaeology.* Academic Press, California.

Shipman, P.
1981 *Life history of a fossil: An introduction to taphonomy and paleoecology.* Harvard University Press, Cambridge.

Simek, J.
1984 *A K-means Approach to the Analysis of Spatial Structure in Upper Paleolithic Habitation Sites: Le Flageolet I and Pincevent Section 36.* BAR International Series 205, Oxford.

Smith, C. S., L. McNees, T. P. Reust
1995 Site Structure of two buried stone circle sites, south Wyoming. *Plains Anthropologist* 40(151): 5-22.

SPSS® Base 9.0
1999 Syntax Reference Guide. Marketing Dept. SPSS Inc, Washington, D.C..

Staab, M.
1979 Analysis of Faunal Material Recovered from a Thule Eskimo Site on the Island of Silumiut, N.W.T., Canada. In *Thule Eskimo Culture: An Anthropological Retrospective* edited by A. P. McCartney National Museum of Man, Mercury Series, Archaeological Survey of Canada Paper No.88, pp.349-379.

Stanford, D.
1976 *The Walakpa Site, Alaska: Its Place in the Birnirk and Thule Cultures.* Smithsonian Contributions to Anthropology, No. 20, Washington, D.C.

Stefansson, V.
1914 *The Stefansson-Anderson Arctic Expedition of the American Museum: Preliminary Ethnological Report.* Anthropological Papers of the American Museum of Natural History. Volume 14, Part 1.

Stenton, D. And Park, R
1994 Formation Processes and Thule Archaeofaunas. In *Threads of Arctic Prehistory* eds. D. Morrison and J. Pilon. Mercury Series, Number 149. Canadian Museum of Civilization, Ottawa.

Stevenson, M. G.
1982 Toward an Understanding of Site Abandonment Behavior: Evidence from Historic Mining Camps in the Southwest Yukon. *Journal of Anthropological Archaeology* 1:237-265.

Stjernquist, B.
1966 Models of commercial diffusion in prehistoric times. *Scripta Minora* 2:1-43.

Stupart, R .F.
1887 The Eskimo of Stupart Bay. Proceedings of the Canadian Institute, Series 3, Volume 4, pp.93-114, Toronto.

Tabachnick, A. G. and L. S. Fidell
1996 *Using Multivariate Statistics*, 3rd edition. Harper Collins, New York.

Taylor, W. E. Jr.
1963 Archaeological Collections from the Joy Bay Region, Ungava Peninsula. *Arctic Circular* 15(2):24-36.

and McGhee, R.
1981 *Deblicquy, A Thule Culture Site on Bathurst Island, N.W.T. Canada.* Mercury Series, Number 102. Ottawa: National Museum of Man.

Tipps, B. L.
1993 Investigation to the spatial structure of lithic scatter sites from an ethnoarchaeological perspective: Examples from Utah and Nevada. *Utah Archaeology* 1993: 57-71.

Thompson, D. (editor)
1995 *The Concise Oxford Dictionary*. Clarendon Press, Oxford.

Tringham, R.
1991 Households with Faces: The Challenge of Gender in Architectural Remains. In *Engendering Archaeology: Women and Prehistory* eds. Joan Gero and M. W. Conkey. Oxford: Blackwell Press.

Turner, L.
1894 *Ethnology of the Ungava District, Hudson Bay Territory,* Eleventh Annual Report of the Bureau of American Ethnology, p.159-350. Washington: Smithsonian Institution.

Vanstone, J.W.
1970 Akulivikchuk: A Nineteenth Century Eskimo Village on the Nushagak River, Alaska. *Fieldiana: Anthropology* 60:1-123.

Vézinet, M.
1982 *Occupation humaine de l'Ungava. Perspective ethnohistorique et écologique.* Paléo-Québec 14. Montréal: Les Presses de l'Université de Québec.

Wandsnider, L.
1996 Describing and Comparing Archaeological Spatial Structures. *Journal of Archaeological Method and Theory* 3(4):319-384.

Wakeham, W.
1898 Report of the Expedition to Hudson Bay and Cumberland Gulf in the Steamship "Diana" under the Command of William Wakeham. Ottawa: Marine and Fisheries Canada.

Wenzel, G.
1979 Analysis of a Dorset-Thule Structure From Northwestern Hudson Bay. In *Thule Eskimo Culture: An Anthropological Retrospective* edited by A.P. McCartney National Museum of Man, Mercury Series, Archeaological Survey of Canada Paper No.88, pp.122-133.

Whallon, R.
1973 Spatial Analysis of Occupation Floors I: Application of Dimensional Analysis of Variance. *American Antiquity* 38(3): 266-278.

Whitridge, P
1997 Gender, Labour, and the Division of Space in Thule Society. *Presented at 30th Annual Meeting of the Canadian Archeological Association, Saskatoon.*

Wright, J.
1979 *Quebec Prehistory*. National Museum of Man, Archaeological Survey of Canada.

Wylie, A
1985 The Reaction Against Analogy. In *Advances in Archaeological Method and Theory*, vol. 8, edited by M.B. Schiffer, pp.63-111. Academic Press, New York.

Yellen, J.E.
1977 *Archaeological Approaches in the Present.* Academic Press, New York.

Yorga, B.
1979 Migration and Adaptation: A Thule Culture Perspective. In *Thule Eskimo Culture:An Anthropological Retrospective* ed. A.P. McCartney, pp. 286-291. National Museum of Man Mercury Series 88.

Young, G. A.
1915 Extracts from Geology and Economic Minerals of Canada. In *Extracts from Reports on The District of Ungava.* E. Cinq-Mars, Québec.

Appendix: Additional Data From Chapter 5

Rock Layers 1-8: Figures A1-A8

Figure A1:Rock Layer 1

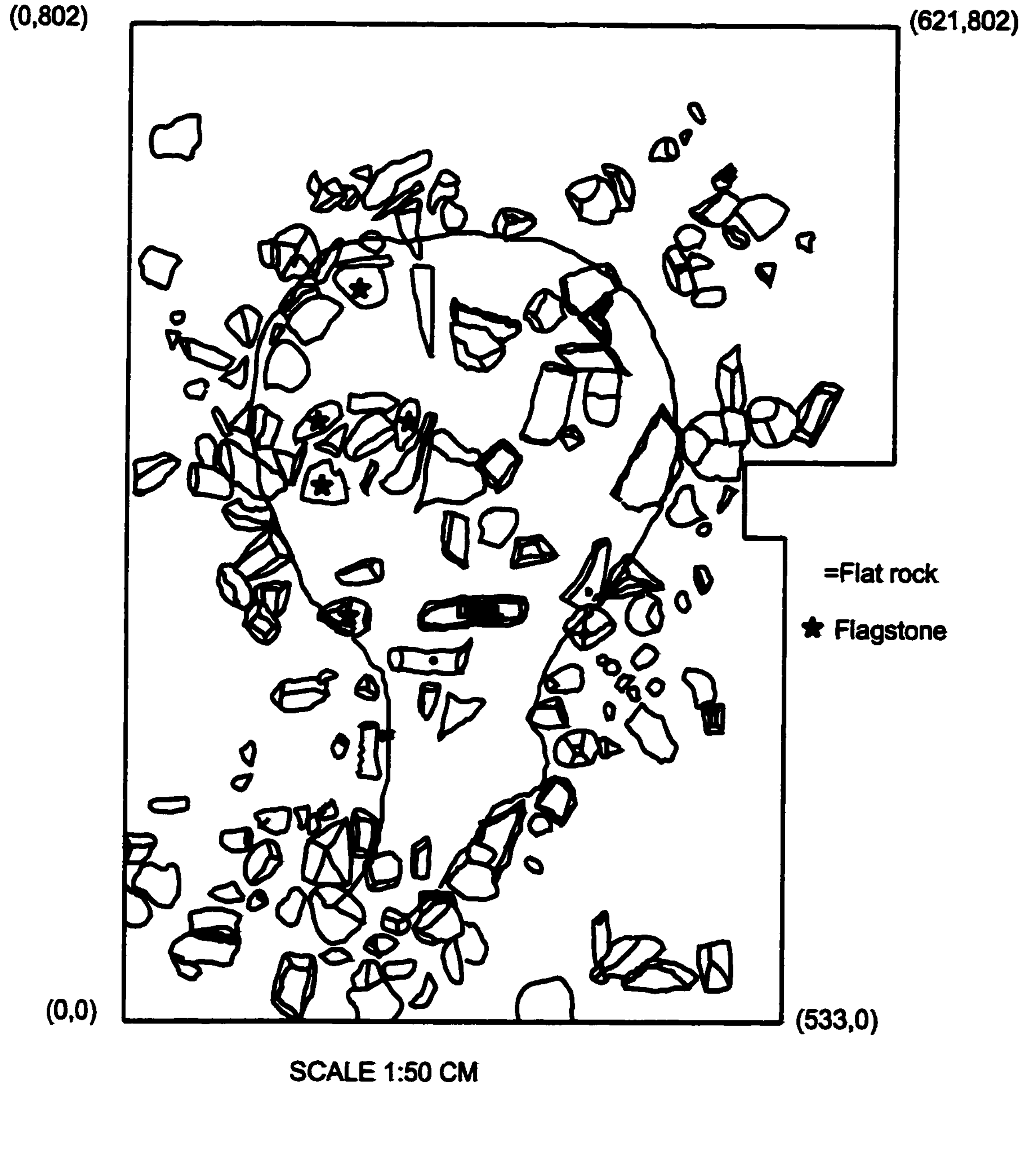
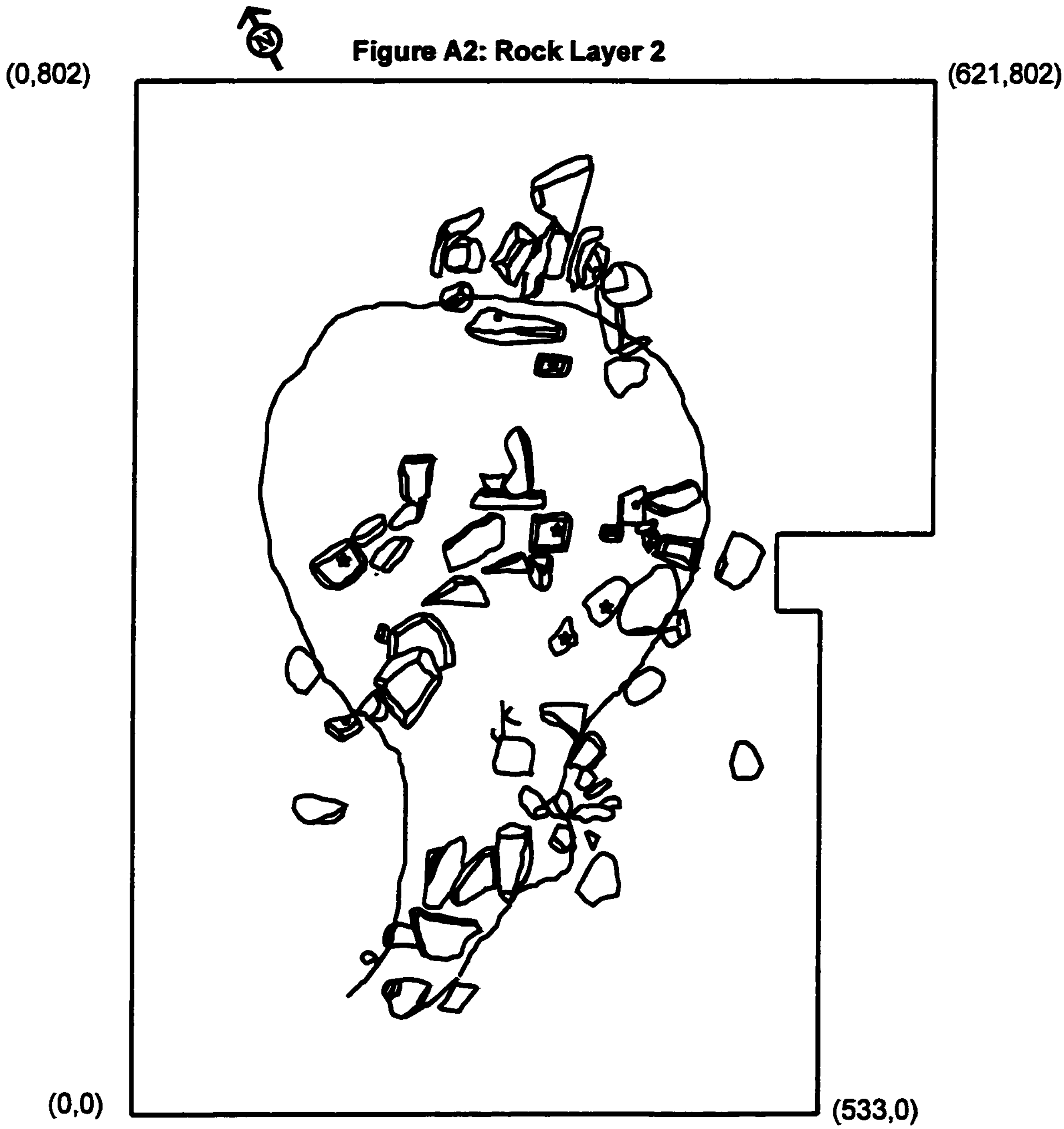
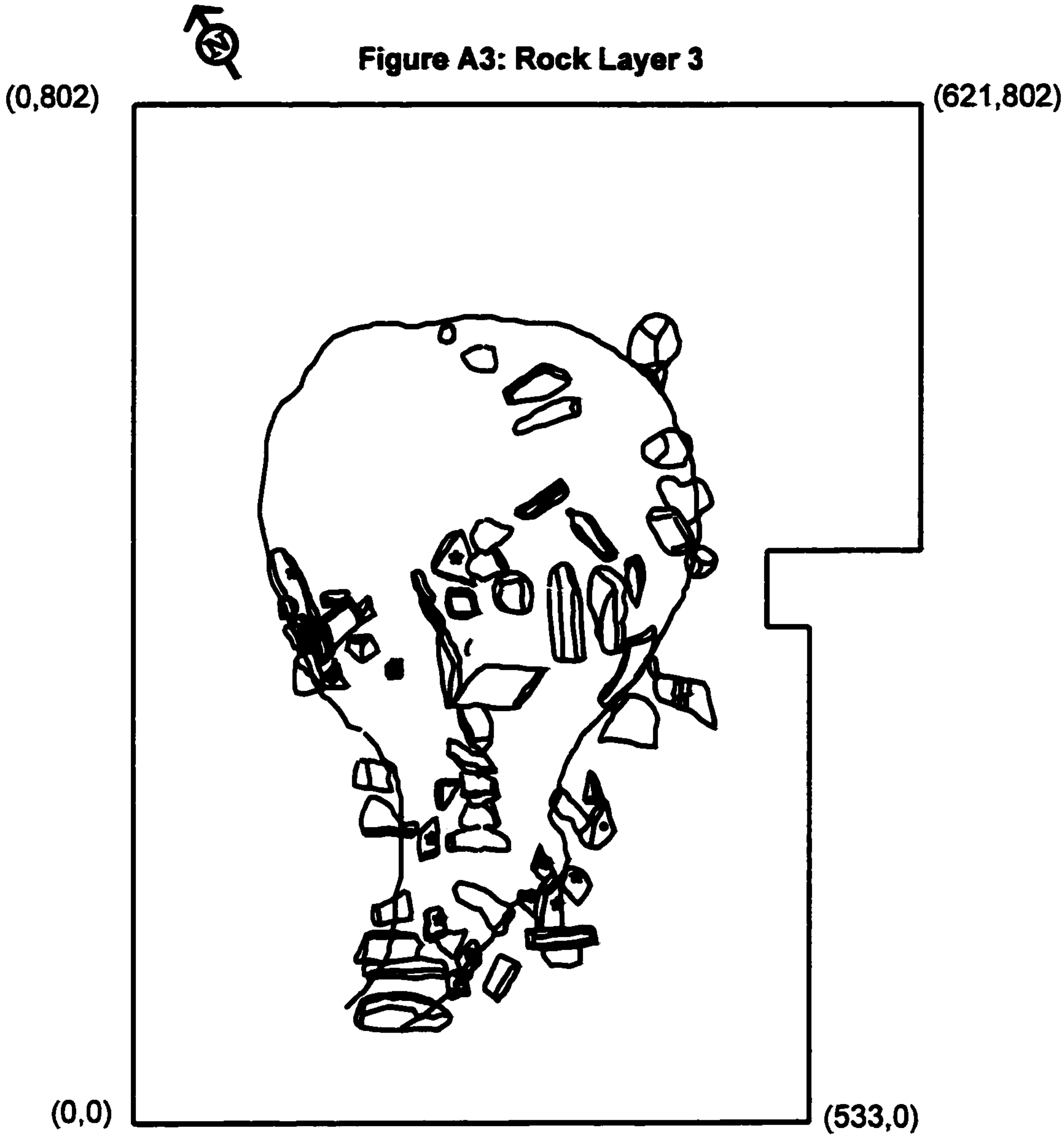


Figure A2: Rock Layer 2



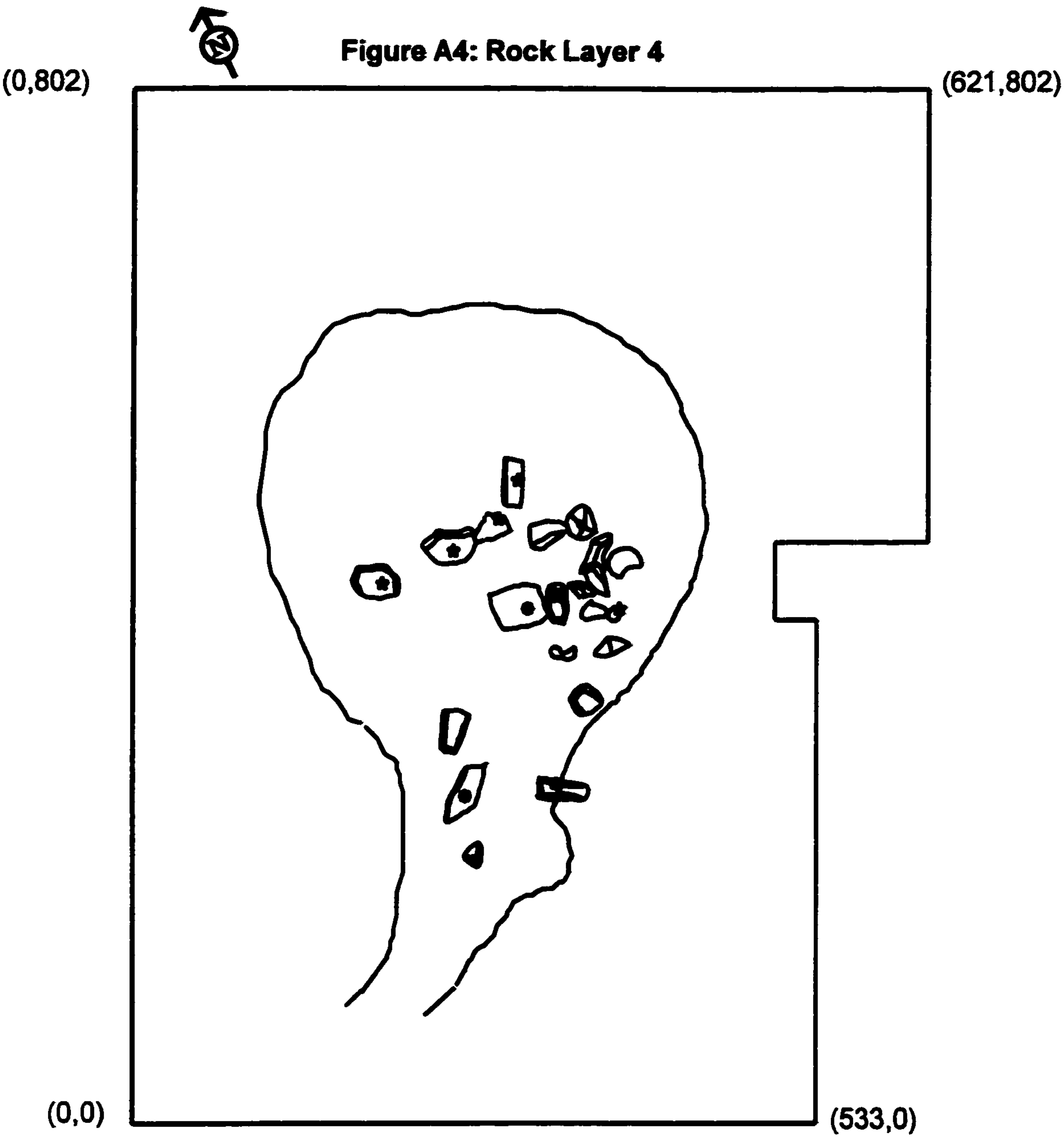
SCALE 1:50 CM

Figure A3: Rock Layer 3



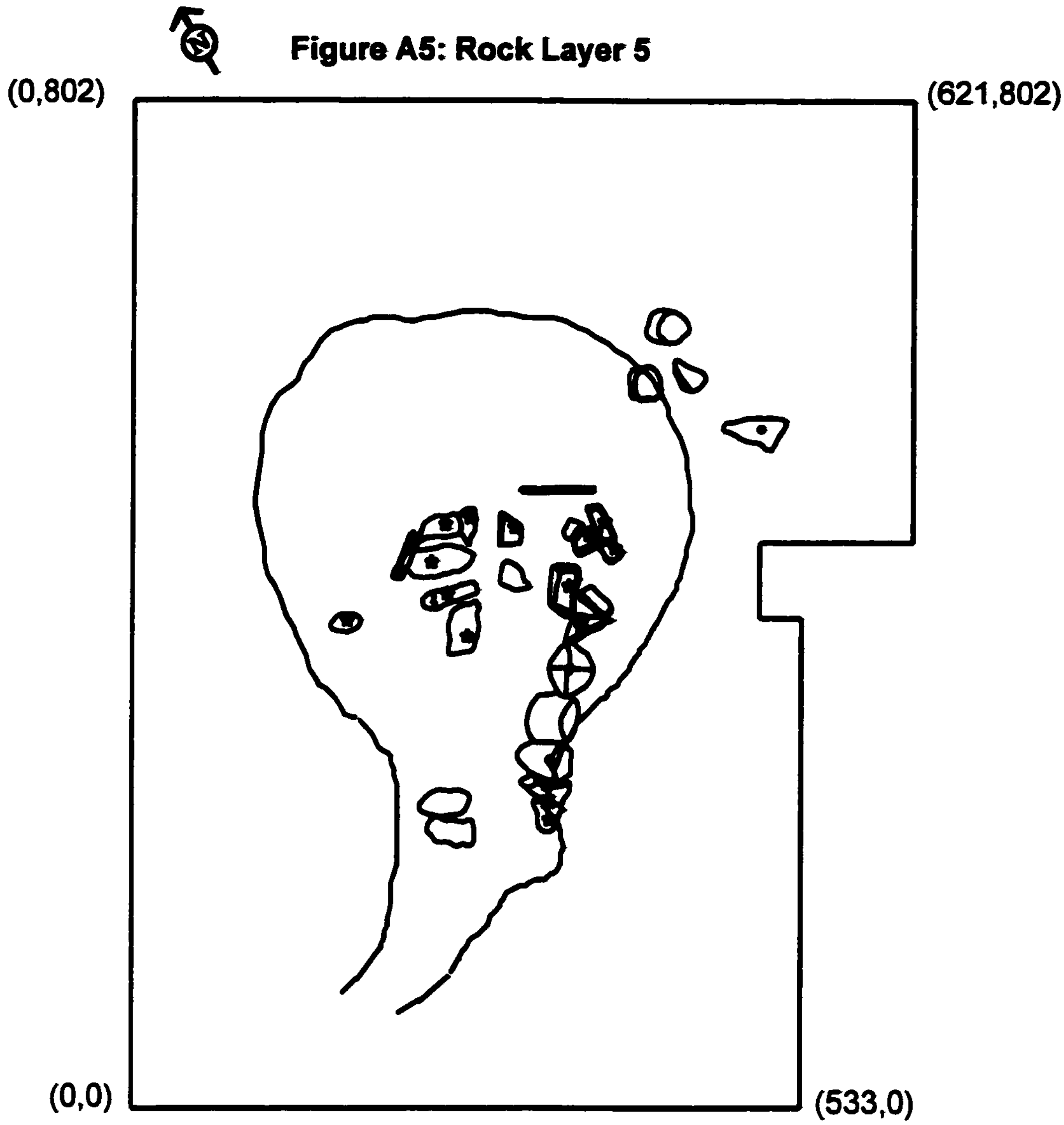
SCALE 1:50 CM

Figure A4: Rock Layer 4



SCALE 1:50 CM

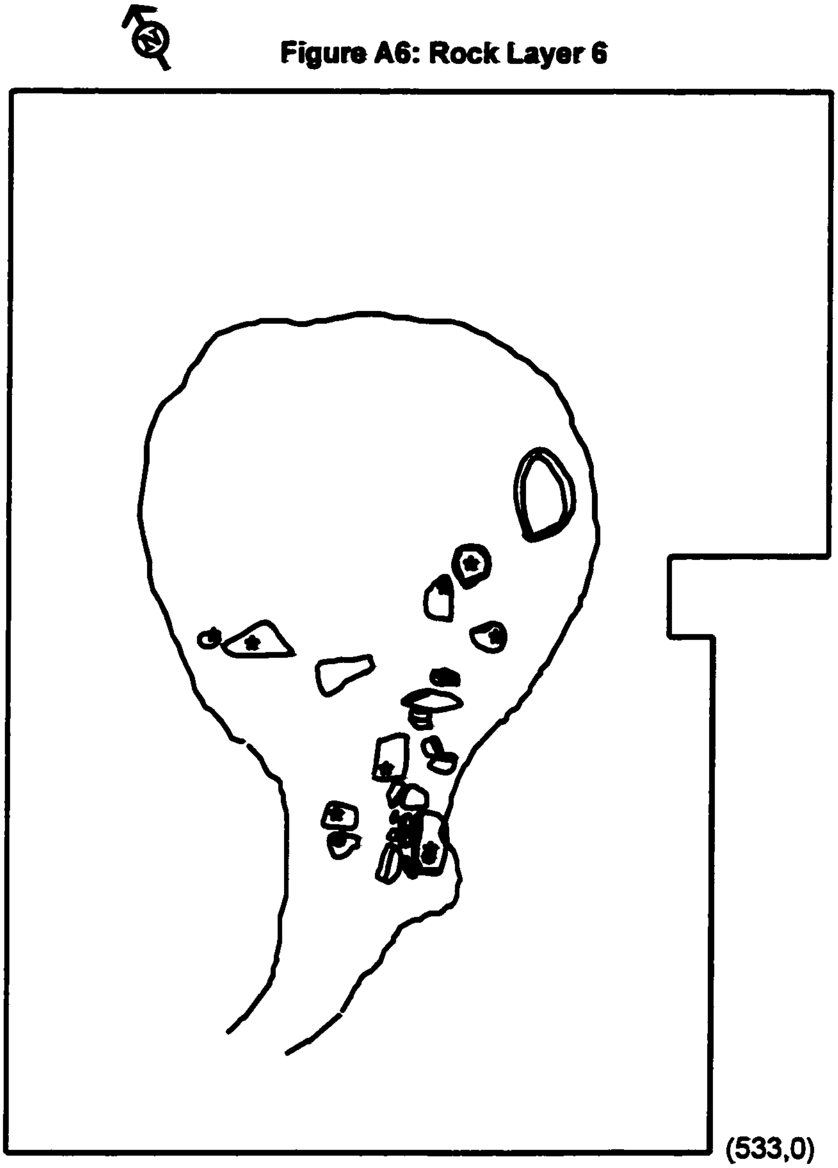
Figure A5: Rock Layer 5



SCALE 1:50 CM

Figure A6: Rock Layer 6

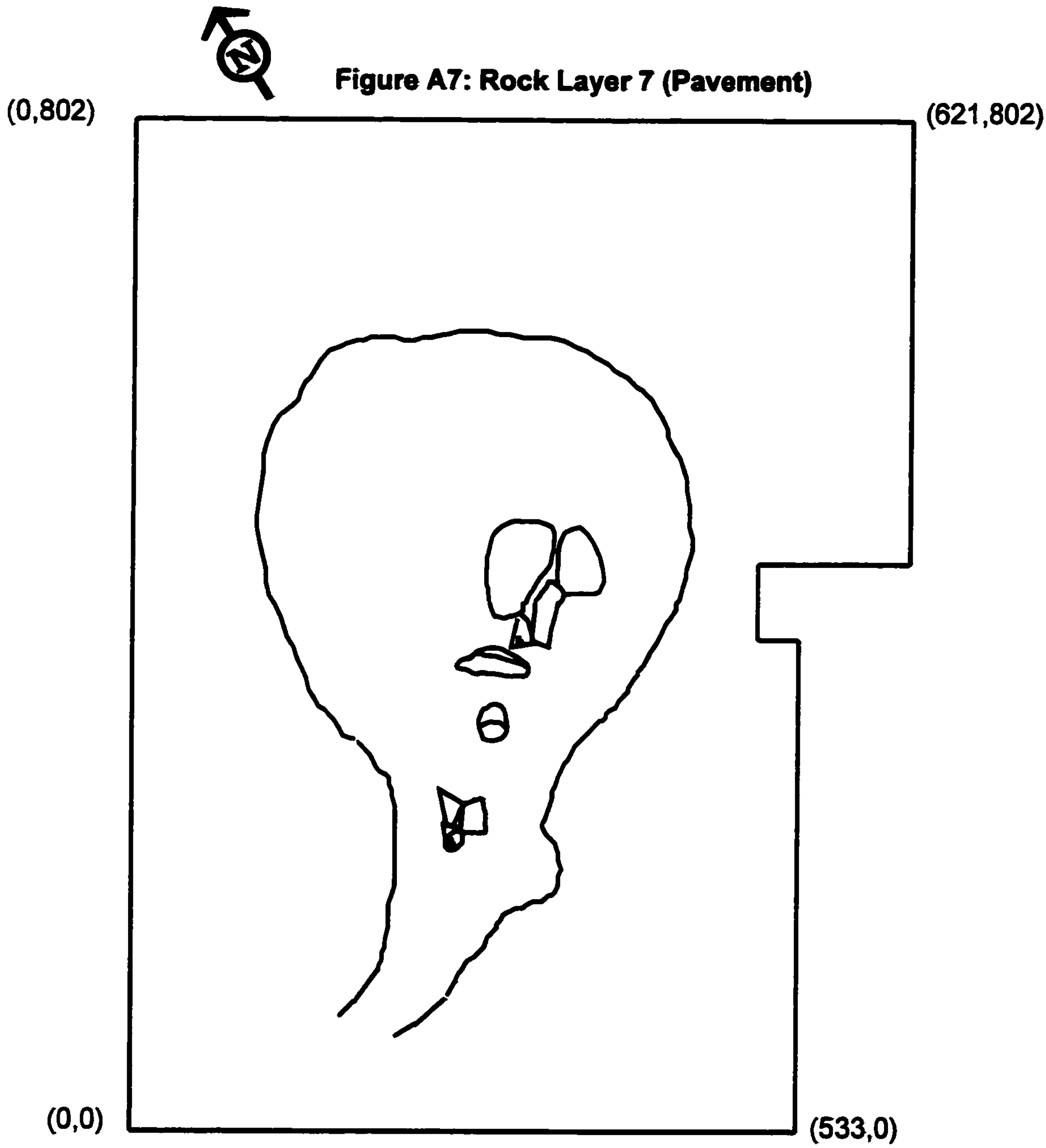
(0,802) (621,802)



(0,0) (533,0)

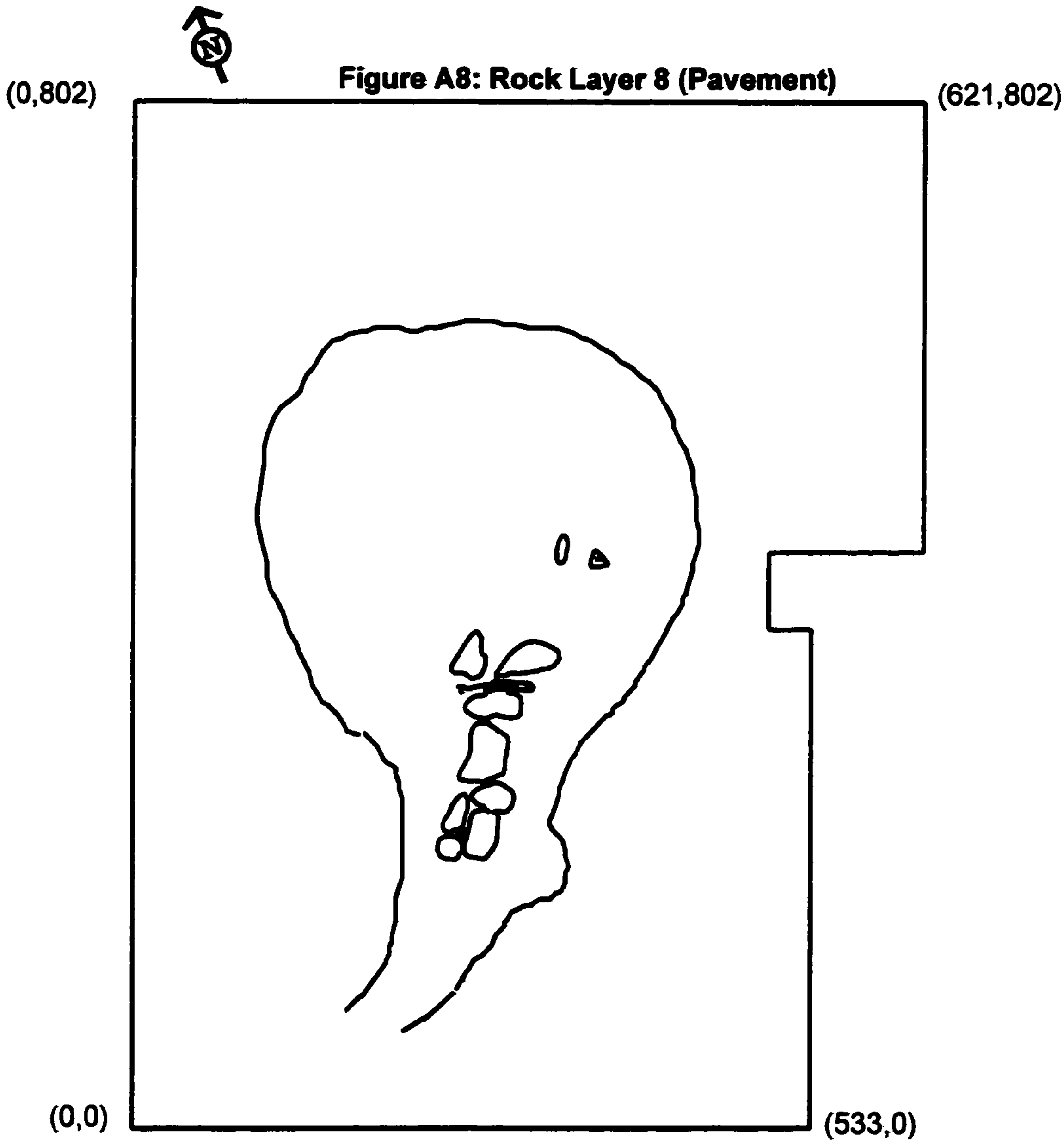
SCALE 1:50 CM

Figure A7: Rock Layer 7 (Pavement)



SCALE 1:50 CM

Figure A8: Rock Layer 8 (Pavement)



SCALE 1:50 CM

Artifact Description and Plates

Adze N-1 (Plate A1)

One adze (cat.1043) was found on the sleeping platform. It was made of slate, had a triangular cross-section and was 4.2 cm long, 1.0 cm wide and 1.2 cm thick. Cultural affiliation was difficult to ascertain as these object types were found in both Dorset and Thule tool kits (Plumet 1991, 1985, McCullough 1989, Maxwell 1985) .

Core Fragment N-3 (Plate A2)

A total of three cores were collected. Two quartz cores (cat. 1053 and 1014) were respectively 4.6 and 1.6 cm in length, 4.0 and 1.4 cm in width and 2.1 cm and 1.4 cm in thickness. These quartz cores were highly processed with a number of small flakes (0.15cm to 0.25 cm in length) removed from the body. The one black quartzite core recovered (cat. 1008) (Plate 5.7) was 4.6 cm in length, 4.0 cm in width and 2.2 cm in thickness and was similar to black quartzite cores found from the Diana Bay Dorset assemblage (Plumet 1985). These three cores were assigned to Dorset cultural origin because Thule rarely used these types of lithic materials for the manufacture of their tools; however, these materials were consistent with Dorset tool manufacture (Plumet 1981, 1991; Maxwell 1985; McGhee 1984).

Plate A1: Adze (Cat #1043)

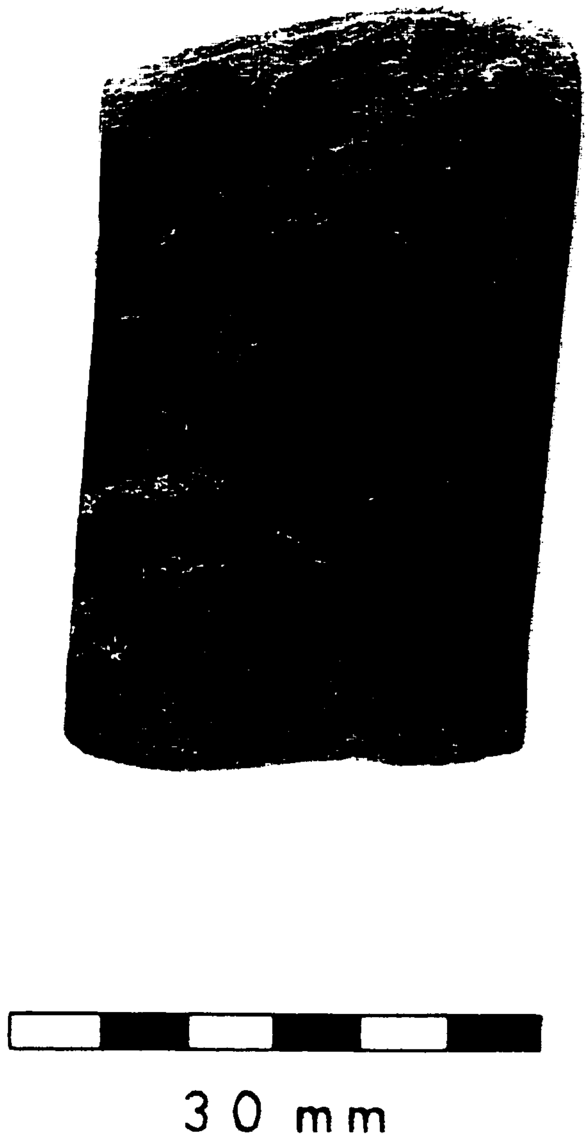
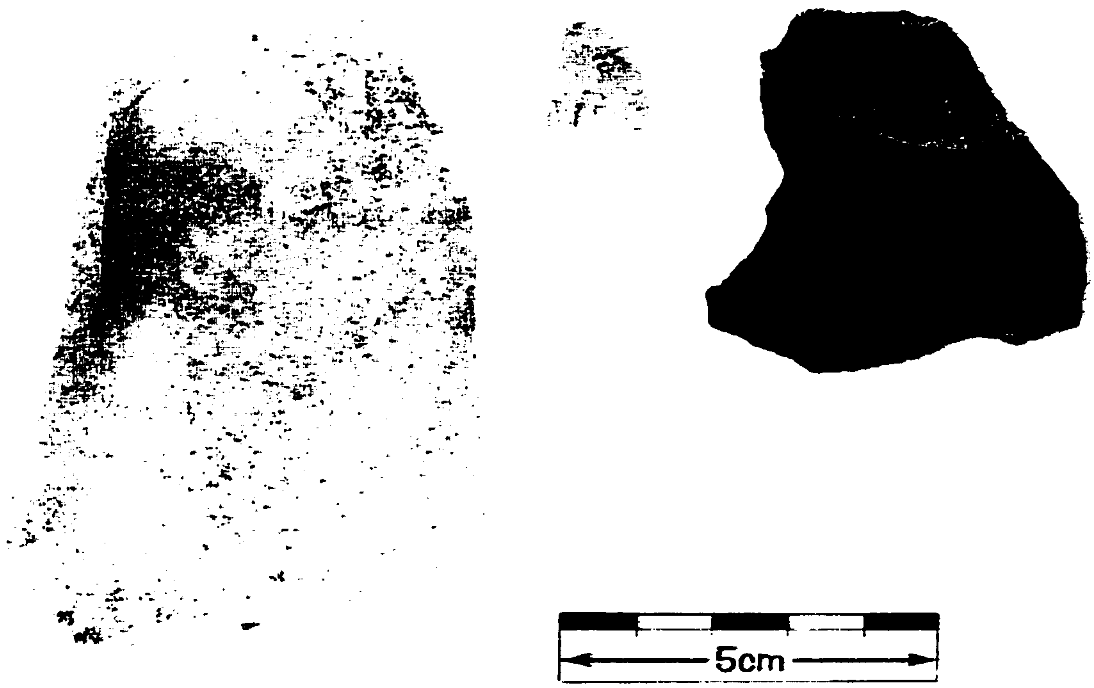


Plate A2: Cores



R-L (Catalogue #):1053; 1014; 1008

Chopper N-7 (Plate A3)

Seven metabasalt specimens appear, from the obvious wear patterns, to have served as all purpose items for chopping, striking, and reducing bone and stone (cat. 1012, 1023, 1024, 1026, 1027, 1032 and 1037). They ranged from 9 cm to 19 cm long, 4 cm to 12 cm wide and 2.9 cm to 6.0 cm thick. Cultural affiliation could not be assigned to these choppers as both Dorset and Thule used metabasalt.

Hammerstone N-1 (Plate A4)

An ovoid shaped metabasalt implement with circular wear marks on the proximal end was probably used as a hammerstone (cat.1036). It was 13.2 cm long, 5.5 cm wide and 3.9 cm thick. Cultural designation was Thule as it was found directly on the living floor of the house.

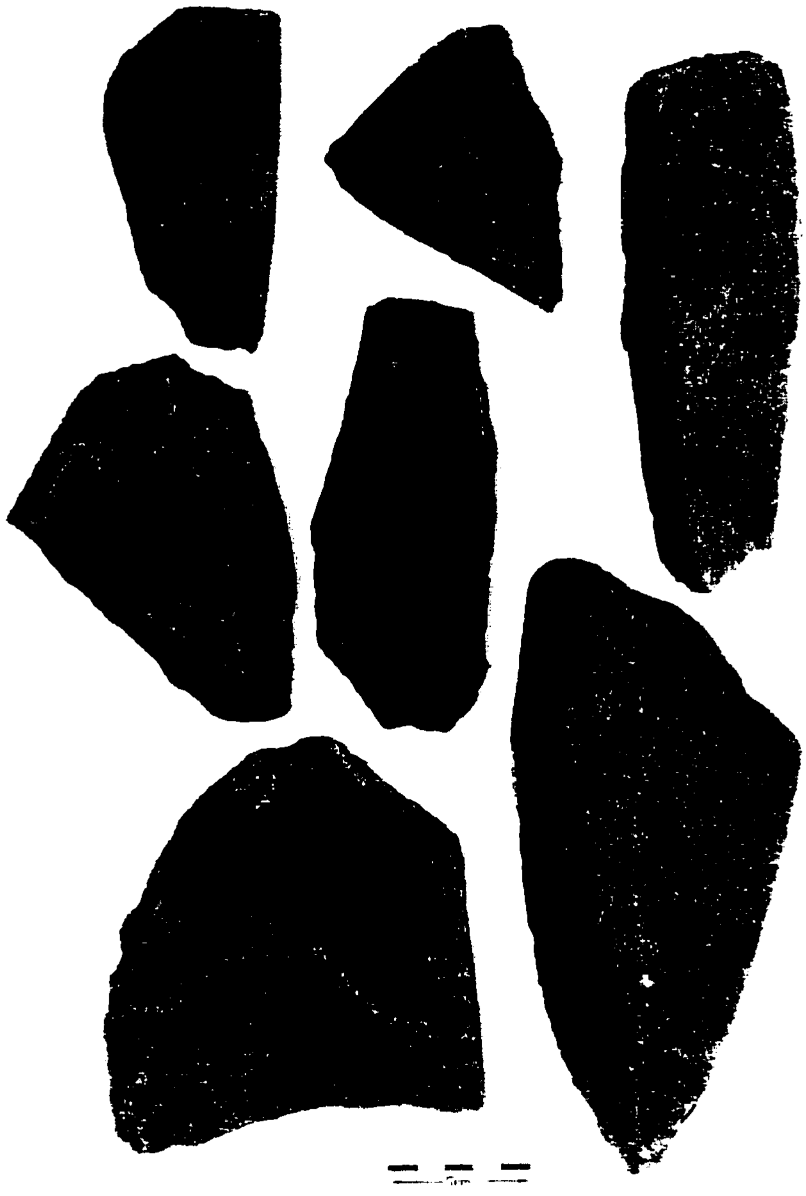
Knife N-8 (Plate A5)

All eight slate knives were (cat. 1011, 1017, 1029, 1045, 1049, 1050, 1055, and 1062) chipped, bifacially worked, and broken distally. The knives ranged from 3.5 cm to 5.1 cm long, from 2.0 cm to 2.6 cm wide and from 0.3 cm to 0.4 cm thick. These knives appear to be of similar to Dorset knives found on Diana Bay (Plumet 1985).

Soapstone N-14 (Plate A6)

A total of fourteen worked soapstone fragments were collected. Five pieces (cat. 1016, 1018, 1042, 1044 and 1079) of varying quality were collected in the northern portion of the excavated area. These specimens ranged from 3.0 cm to 4.4 cm long, from 0.9 cm to 3.0 cm wide and from 0.7 cm to 1.8 cm thick. Three lamp fragments (cat. 1013, 1025 and 1040) were collected. The first lamp fragment (cat. 1013) was a body piece coated in grease found in the southeast quadrant and is 3.2 cm long, 2.2 cm wide and 1.5 thick. The other two lamp specimens, (cat. 1025 and 1040) rim fragments, were respectively 7.6 cm and 5.6 cm long, 1.2 cm and 1.0 cm wide and 1.5 cm and 1.1 cm thick.

Plate A3: Choppers



R-L, Top-Bottom: 1037; 1032; 1027; 1023; 1012; 1024; 1026

Plate A4: Hammerstone (1036)

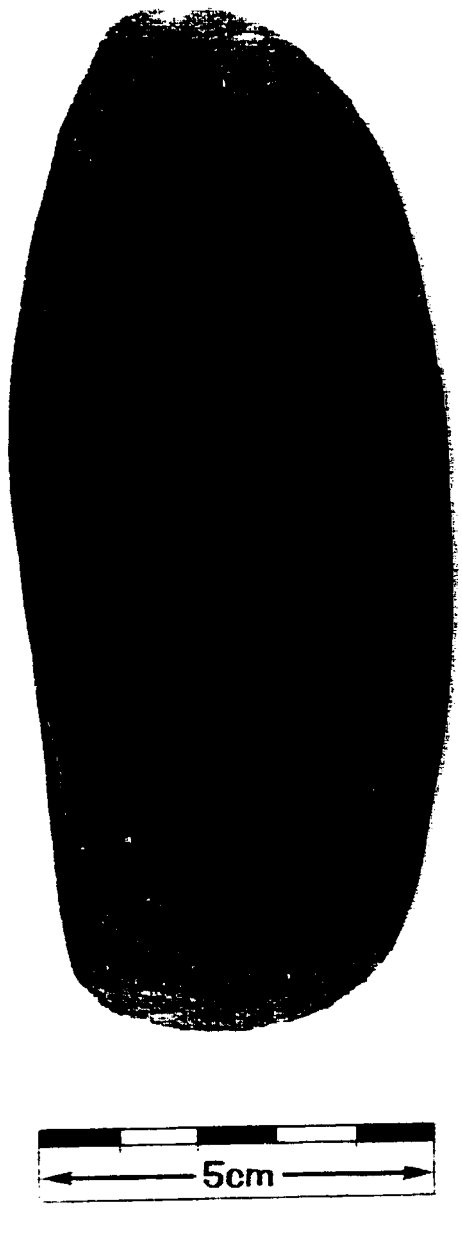


Plate A5: Knives and Preforms

R-L, T-B: Knives: 1029; 1011: 1050; 1049; 1055: 1062: 1045: 1017
Preforms (Bottom Row): 1034; 1010

Plate A6: Soapstone

R-L, T-B: 1052; 1013; 1003; 1019; 1006; 1040; 1044; 1042; 1018; 1025; 1041; 1016; 1079; 1038.

Based on thickness of these lamp pieces they are probably of Thule origin. A body portion of a lamp stand (cat. 1019) covered in grease was recovered from the 'kitchen' of the living area. This specimen was triangular in shape and was 8.6 cm long, 5.9 cm wide and 0.6 cm thick. Thule cultural affiliation was assigned as it was recovered from the pavement floor of the living area. Five vessel fragments were recovered from the Thule midden (SE) of the excavated area (cat.1003, 1006, 1041 and 1052). All the fragments were covered in grease and were between 4.0 cm and 8.0 cm long, 2.8 cm and 4.1 cm wide and 0.7 cm and 1.8 cm thick. Catalogue numbers 1006 and 1003 could be classified as Thule based on their thickness; however, specimens 1041 and 1052 could not be assigned a specific cultural origin as they overlapped both Dorset and Thule vessel thickness. One complete miniature soapstone vessel was recovered from the SE quadrant of the excavated area and was 3.6 cm long, 2.8 cm wide and 1.1 cm thick.

Microblade N-1 (Plate A7)

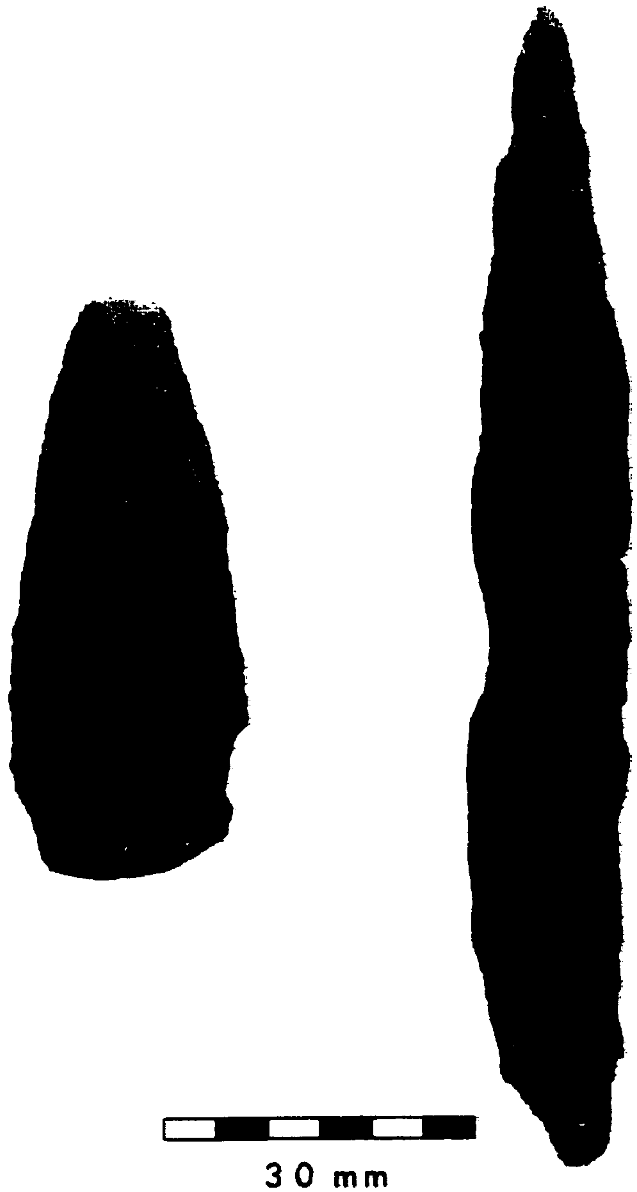
A medial portion of a Dorset microblade (cat.1007) was recovered from the SW quadrant of the excavated area. It was made from a grey/black chert and was 1.3 cm long, 1.2 cm wide and 0.25 cm thick, measurements consistent with Middle and Late Dorset microblades (Auger 1986; Plumet and Gangloff 1990; Plumet 1994).

Point N-2 (Plate A8)

Two points, one made from slate (1059 a-b) and one from sandstone (cat. 1048) were recovered from the western portion of the excavated area. The slate point was complete, triangular and partially polished on the dorsal surface. This specimen (1059 a-b) appeared to have been abandoned half-way through its construction based on the apparent 'crudeness' of its manufacture (unfinished) and the presence of polish on the dorsal portion of the knife. Artifact 1059 a-b was 11.5 cm long, 2.5 cm wide and 0.4 cm thick. The second point (1048) was broken dorsally, triangular in cross-section and becomes progressively thicker towards the distal end. It was 5.6 cm long, 2.1 cm wide and 0.8 cm thick. Both these points are similar to points in Dorset toolkits found at Diana Bay (Plumet 1994)

Plate A7: Microblade (1007)

Plate A8: Points



R-L: 1048; 1059 (a-b)

Preform N-2 (Plate A5)

Two preforms (cat. 1010 and 1034), which appear to be Dorset knife preforms, based on shape, thickness and size, were collected from the northwest quadrant. They were both made of slate and measure respectively 6.4 cm and 4.1 cm long, 3.3 cm and 2.2 cm wide and 0.3 cm and 0.25 cm thick.

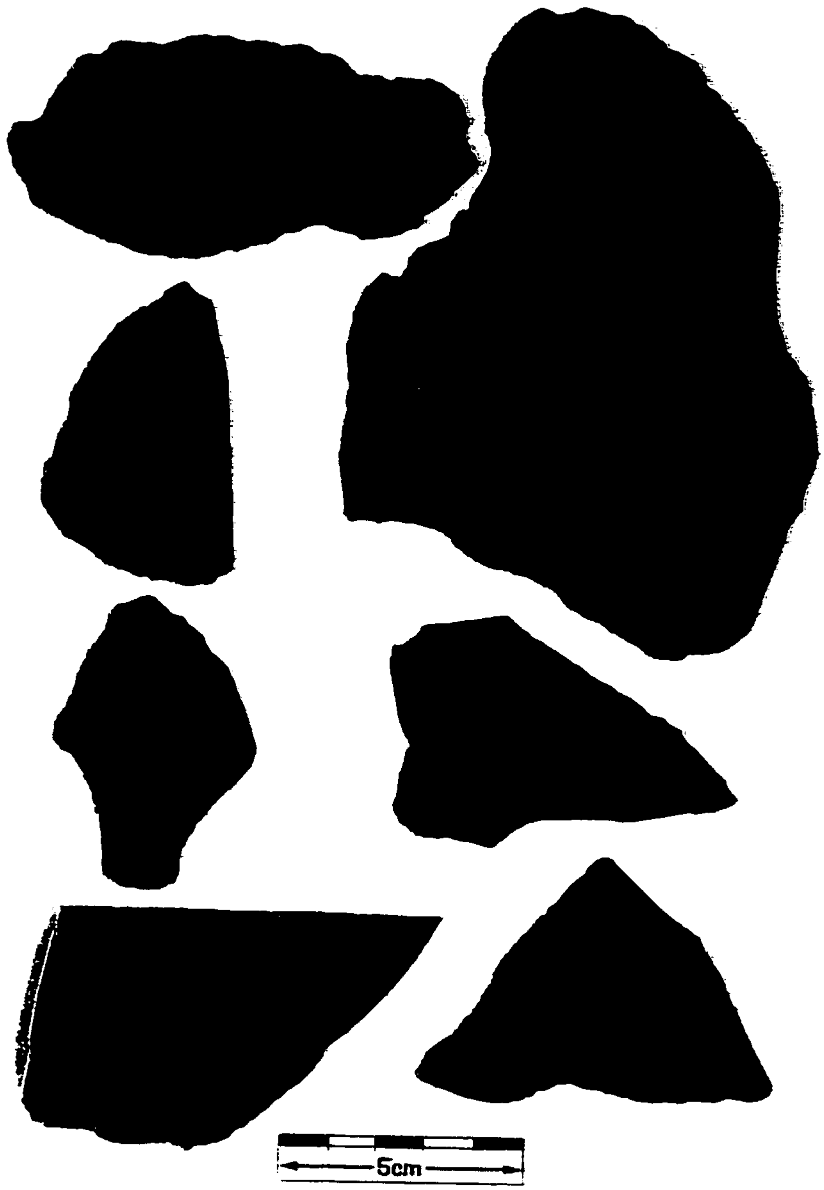
Retouched Flake N-7 (Plate A9)

Seven retouched flakes were collected from the northern portion of the excavated area (cat. 1030, 1031, 1033, 1035, 1051, 1054 and 1057). All but one retouched flake (1051; sandstone) were manufactured from slate. The flakes range from 5.9 cm to 13.3 cm long, 3.9 cm to 8.6 cm wide, and from 0.3 cm to 0.9 cm thick. Cultural affiliation cannot be assigned to these flakes, as they could have been used as expedient tools for either Dorset or Thule cultures.

Scrapers N-3 (Plate A10)

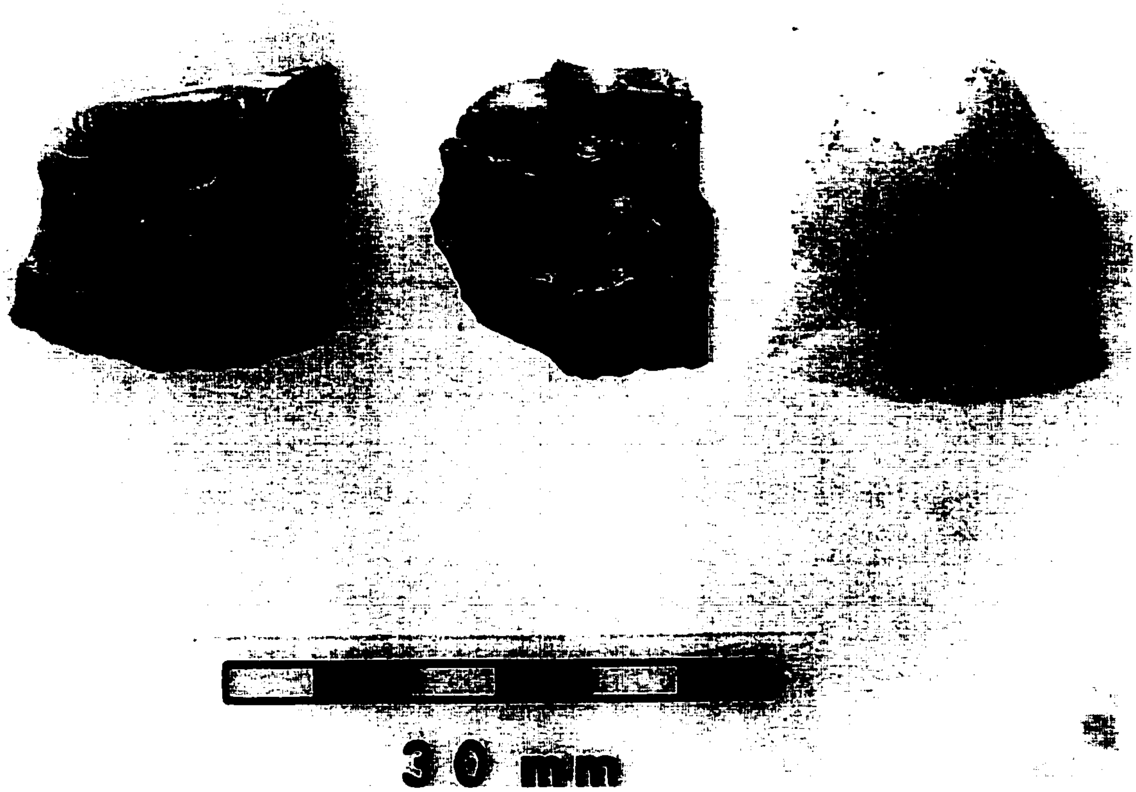
Three scrapers of Dorset origin were collected from the SW, NW and NE quadrants (Auger 1986; Nagle 1986; Plumet 1986; 1991). Two scrapers (cat. 1004 and 1028) awere manufactured from chert and are therefore an imported material as the nearest area for this type of chert is in the Labrador area. The first scraper, cat.1004, is complete, unifacially worked, has a 1.3 cm flake scar on the distal portion and is 1.6 cm long, 1.7 cm wide and 0.7 cm thick. The second scraper (cat.1028), an incomplete specimen, was bifacially worked and was represented by part of the distal and proximal portions. This scraper was made from a blue/grey chert and was 1.5 cm long, 1.7 cm wide and 0.7 cm thick. The third scraper (cat. 1020) was complete and made from a locally available milky quartz. This scraper was unifacially worked and was 2.1 cm long, 1.7 cm wide and 0.9 cm thick.

Plate A9: Retouched Flakes



R-L, T-B: 1054; 1035; 1031; 1051; 1030; 1057; 1033

Plate A10: Scrapers



R-L: 1004; 1028; 1020

Vessel N-1 (Plate A11)

A large piece of metabasalt (cat. 1056) naturally in the form of a vessel was perhaps used as a vessel as burned fat and some burning was located on part of the body and rim. It was found in the kitchen/ cooking area and was 24.4 cm long, 13.3 cm wide and 6.0 cm thick.

Whetstones N-5 (Plate A12)

Five lithic objects (cat. 1001, 1009, 1015, 1021 and 1022) appear (based on the amount of wear and polishing) to have been utilized as whetstones. The whetstones were collected in every quadrant of the excavated area. The first whetstone (cat.1001) made of metabasalt was trapezoidal, had a working edge on the distal portion and was 9.4 cm long, 9.0 cm wide and 4.0 cm thick. Some wear on each edge indicates that it may have served as an all-purpose chopper and/or striking tool. The second whetstone (cat.1009), also trapezoidal in shape, was made from iron-bearing slate, had a working edge on the distal portion and was 5.1 cm long, 3.0 cm wide and 4.1 cm thick. The third whetstone (1015) which was removed from the 'midden' area (SE), was made of iron-bearing slate, rectangular in shape and was worked/polished on the posterior surface. This artifact was 6.1 cm long, 0.8 cm wide and 0.7 cm thick. The fourth whetstone (1021) made from metabasalt, triangular in shape and worked on the anterior surface, was 9.4 cm long, 6.2 cm wide and 2.25 cm thick. The last whetstone (cat.1022), also made of metabasalt, was triangular in shape and had a working edge 3 cm long located on the proximal and posterior portion of the stone. The piece was 7.4 cm long, 3.9 cm wide and 2.9 cm thick. Both Dorset and Thule used metabasalt and slate whetstones similar to those recovered (Plumet 1985, 1991, 1994).

Plate A11: Vessel (1056)

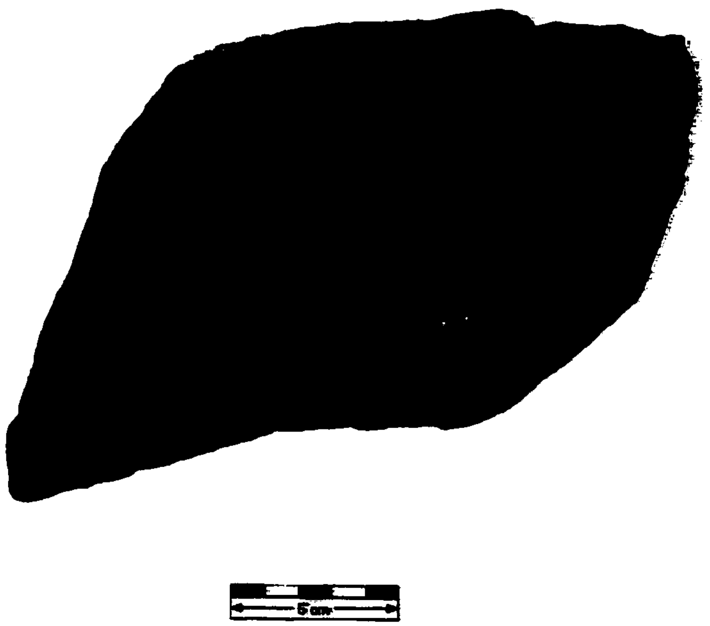
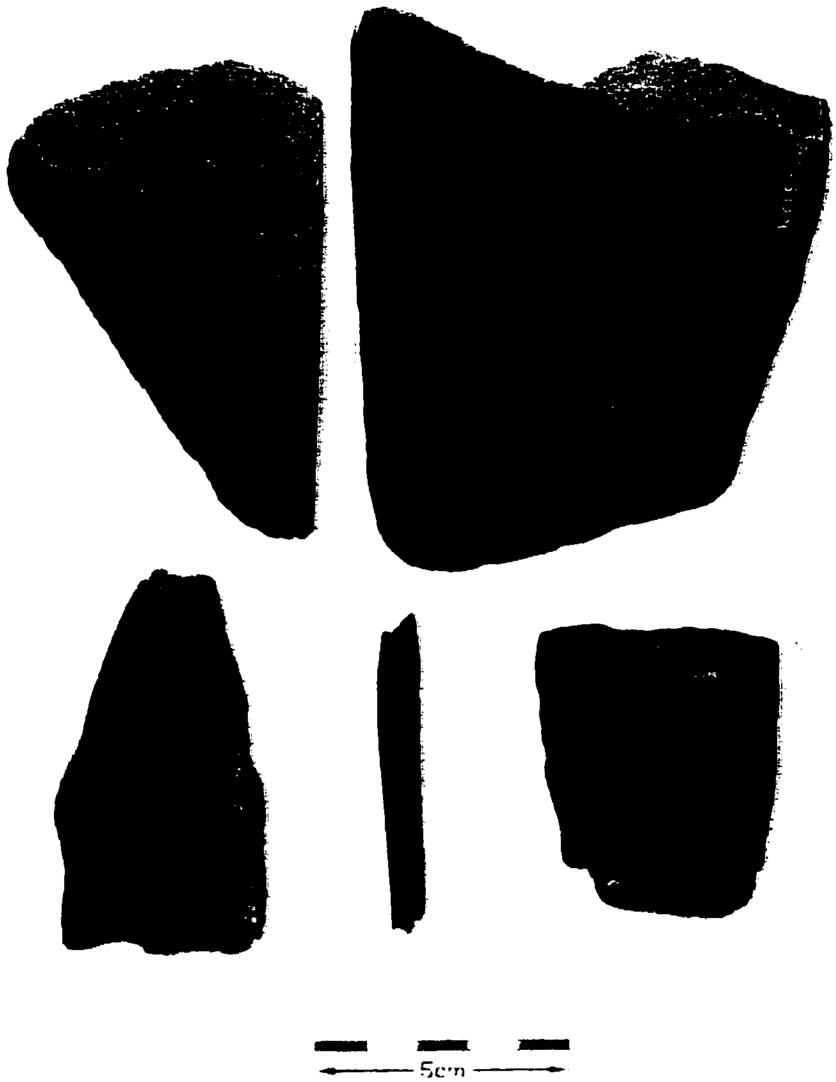


Plate A12: Whetstones



R-L, T-B: 1021; 1001; 1022; 1015; 1009

Unidentified N-2 (Plate A13)

Two objects (cat. 1058 and 1080) of unknown use were recovered from the NE quadrant. The first artifact was a small cylindrical shaped object made from metabasalt and was 1 cm^3. It appeared to be 'toy-like', similar to some small toy objects collected from historic Inuit sites; however, there is no certainty in this argument. The second artifact was a long polished slate fragment that was triangular (bi-axial) in cross-section. It was found on the living floor of the house. It was polished on the posterior surface and part of the dorsal surface which was represented by the non-worked edge. It was represented by the medial section, and was 7.2 cm long, 2.1 cm wide and 1.0 cm thick.

Organics N=26

Worked Antler N-1 (Plate A14)

One piece of worked antler was found on the sleeping platform and was worked to a dull point on the proximal portion. This piece was 4.4 cm long, 0.5 cm wide and 0.3 cm in thick. This specimen was considered to be of Thule origin, as it was collected from the sleeping platform.

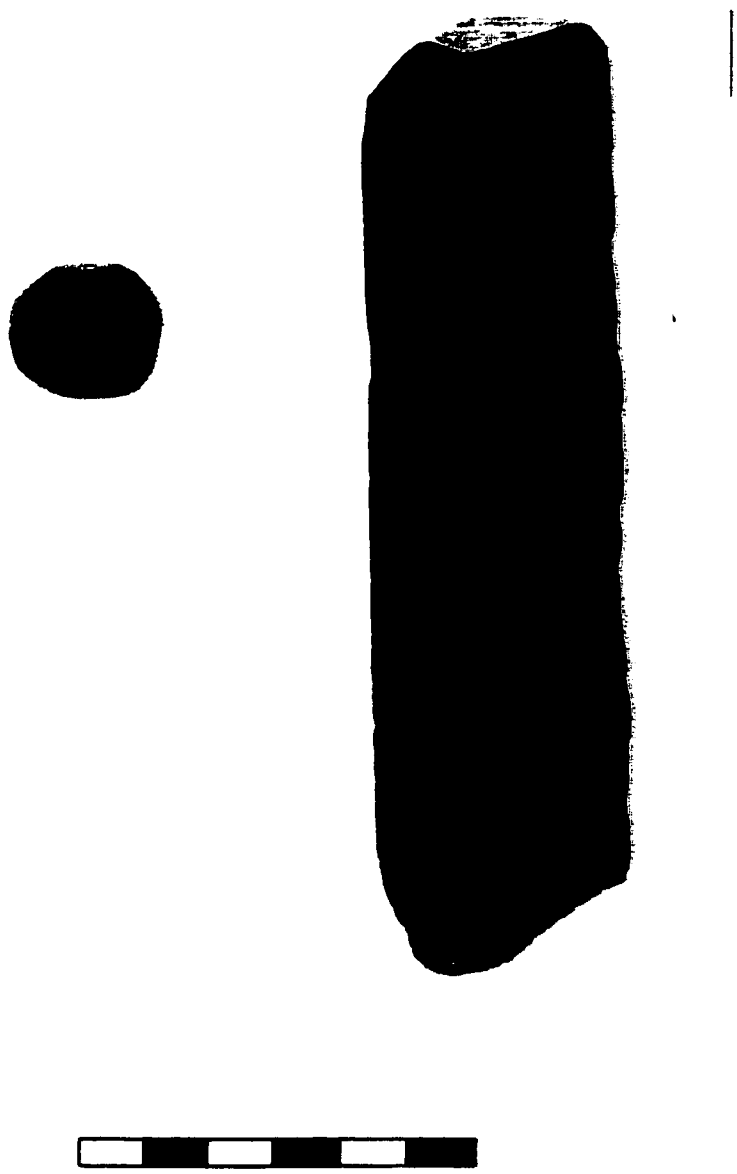
Worked Bone N-1

A single piece of worked bone found on the sleeping platform was very decomposed upon excavation and was destroyed during shipment.

Worked Wood N-2 (Plate A15)

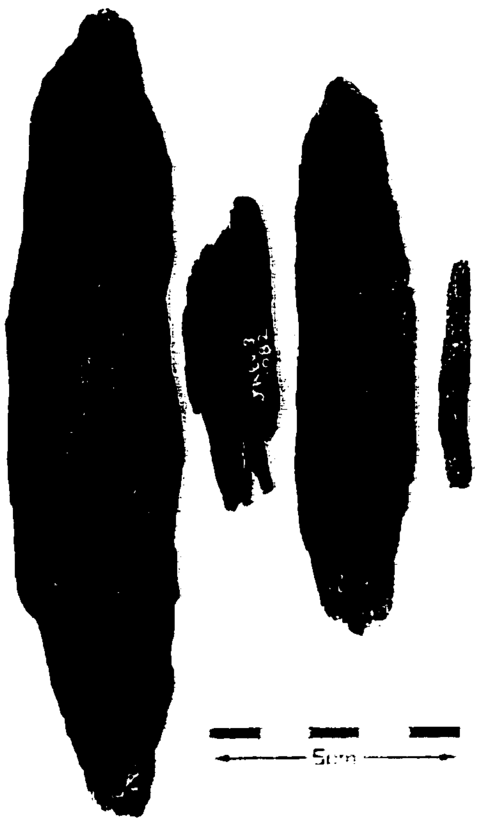
Two pieces of worked wood were collected from the sleeping platform. The first piece (cat.1039), badly decayed, was destroyed during shipment.

Plate A13: Unidentified Objects



R-L: 1080; 1058

Plate A14: Organics



R-L: Baleen 1064; 1063; 1082; Worked Antler

Plate A15: Wood

One specimen of worked wood (1074) located on far left

The second piece (cat.1074) of modified wood was cut horizontally on both ends. It was 4.3 cm long, 1.0 cm wide and 0.7 cm thick.

Baleen N-3 (Plate A14)

Three pieces of baleen, of unknown use, were collected from living floor. The first piece (cat. 1064), tapered at the both ends and slightly curved on the sides, was 14.6 cm long, 3.3 cm wide and 0.3 cm thick. The second fragment (cat.1063) associated with 1064 and similar in shape was 10 cm long, 2.2 cm wide and 0.1 cm thick. The last piece (cat.1082), also similar in shape to the other baleen fragments was 5.7 cm long, 1.7 cm wide and 0.2 cm thick.

Driftwood N-15 (Plate A15)

Fifteen pieces of driftwood were recovered from inside the dwelling. A high frequency of driftwood was found along the living floor and entrance passage. Two pieces of wood (cat. 1060 and 1070) exhibited signs of burning. The specimens ranged from 5.3 cm to 13.4 cm long, 0.4 cm to 1.8 cm wide and 0.2 cm to 0.8 cm thick.

European Artifacts N- 4 (Plate A16)

The four iron specimens found in the SE, SW and NW quadrants were highly oxidized (cat. 1047, 1067 and 1083). A nail shaft (1047), which broke into three pieces during transport, was recovered from the SE portion of the excavated area. The piece was flattened which is possibly from Thule modification. It was 12.5 cm long, 2.7 cm wide and 1.4 cm thick. Three other pieces of iron, all small indistinguishable fragments, were recovered from western portion of the excavated area and ranged in length from 1.5 cm to 4.2 cm, in width from 0.6 cm to 2.0 cm and in thickness from 0.4 cm to 1.0 cm.

Plate A16: European Artifacts

R-L: 1067; 1083; 1047

Weathering and Preservation

Table A1: Weathering Stages of Faunal Assemblage

Stage of Weathering	Absolute Frequency	Relative Frequency (%)
0	1	0.3
1	48	15
2	131	41
3	74	24
4	46	15
5	7	2.2
6	3	1
N/A	4	1.3
Total	314 (313+1 destroyed in shipment)	99.8

Table A2: Preservation of Bone

Stage of Preservation	Absolute Frequency	Relative Frequency (%)
1	80	25
2	170	55
3	64	20
Total	314	100