# Late Prehistoric Indian Subsistence in Northeastern Newfoundland: Faunal Analysis of Little Passage Complex Assemblages from the Beaches and Inspector Island Sites

by

Jennifer Cridland

A thesis submitted to the

School of Graduate Studies

in partial fulfilment of the

requirements for the degree of

Master of Arts

Department of Anthropology
Memorial University of Newfoundland

April 1998

St. John's Newfoundland

0-612-34174-7

## ABSTRACT

This thesis concerns the subsistence pattern of the Little Passage Recent Indian complex (ca. A.D. 1200 to A.D. 1500). Specifically, this study focused on the mode of subsistence on the northeast coast of Newfoundland as represented by the new faunal assemblages from the Beaches site (DeAk-1), Bonavista Bay and Inspector Island site (DiAq-2), Notre Dame Bay. Little is known about the economic activities of the Little Passage people. To date, only two other sites have provided direct evidence of these activities in the form of preserved animal material. As a result, the Little Passage subsistence pattern had only been inferred from this meagre faunal evidence and from less direct evidence of site location, knowledge of resource availability, associated tool forms, and analogy to related and better known cultures situated in similar environments. This thesis begins to address the present lack of direct subsistence information for the Little Passage complex in northeastern Newfoundland by presenting the largest faunal samples yet to be recovered. Inspector Island produced 807 identifiable bone fragments. The Beaches produced 239 identifiable bone fragments.

The new faunal data supported the hypothesized generalized subsistence approach of the Little Passage people proposed in the current literature. The thesis material indicated that there was a focus on inner coastal marine resources, but not on any one marine species. As predicted, there were positive indications that this

coastal focus occurred during a period from late winter to at least mid-summer. The new faunal data did not particularly further our understanding of Little Passage exploitation of the Newfoundland interior and their fall and winter subsistence activities. The hope is that faunal material will someday be recovered that will provide concrete evidence to reconstruct these aspects of the Little Passage subsistence cycle.

Also, as it has been demonstrated that the people of the Little Passage complex were the immediate predecessors of the historic Beothuk, the thesis results reinforce current theories that the "traditional" Beothuk annual round would have been affected, first by the European migratory summer fishery, and then by permanent European settlement along the Newfoundland coast.

# TABLE OF CONTENTS

## LIST OF TABLES

## LIST OF FIGURES

## LIST OF ABBREVIATIONS USED

For Figures

| | |
|---|---|
| AC | Atlantic cod |
| AL | Alcidae |
| BB | black bear |
| BG | black guillemot |
| BV | beaver |
| CB | caribou |
| CG | Canada goose |
| COD | codfishes |
| C | *Canis* sp. |
| CV | Cervidae |
| CR | cormorant |
| CT | cetacean |
| DC | double-crested cormorant |
| DK | duck |
| EI | eider sp. |
| E/S | eider/scoter |
| F. | family, taxonomic |
| FX | red fox |
| GL | gull sp. |
| GS | goose |
| HRB | harbour seal |
| HRP | harp seal |
| LH | longhorn sculpin |
| MRG | red-breasted merganser |
| MT | pine marten |
| OT | river otter |
| PH | Phocidae |
| Ph | *Phoca* sp. |
| RV | raven |
| SC | sculpins |
| SD | sea duck |
| SH | shorthorn sculpin |
| SM | rainbow smelt |

For Appendices

| | |
|---|---|
| A | adult |
| ANT | anterior |
| ART | articular |
| AX | axial |
| CH | charred |
| CA | calcined |
| C | cut |
| c. | carpal |
| DIST | distal |
| DOR | dorsal |
| EPI | epiphysis |
| EX | extremity |
| GN | gnawed |
| H | head |
| I | immature |
| $I^+$ | immature+ |
| J | juvenile |
| j.c. | juvenile cortex |
| L | left |
| LAT | lateral |
| LB | limb |
| M | mammal |
| MED | medial |
| MIDS | midshaft |
| NVEL | no visible epiphyseal line |
| O | osteichthyes |
| POS | posterior |
| PROX | proximal |
| PTL | pectoral limb |
| PVG | pelvic limb |
| R | right |
| SUP | superior |
| t. | tarsal |
| TK | trunk |
| VEL | visible epiphyseal line |
| W | whole |
| w/o | without |

# ACKNOWLEDGEMENTS

Many people should be thanked for their great support, enthusiasm and patience. This project would certainly not have been completed without the help of the following individuals: my supervisor, Dr. Priscilla Renouf and Dr. Ralph Pastore, from the Archaeology Unit, Memorial University of Newfoundland, archaeologist Laurie MacLean, Darlene Balkwill and the rest of the staff at the Zooarchaeological Analysis Program in Ottawa, Patty Wells and her family, my accountant and my own family. The Institute for Social and Economic Research (I.S.E.R.), Memorial University of Newfoundland, provided essential funding for this project. Thank you to the staff at the Historic Resources Branch, St. John's, who supplied me with many site reports.

Thank you Dr. Savage.

# CHAPTER 1

## Introduction

This thesis concerns the subsistence pattern of the Little Passage Recent Indian complex (ca. A.D. 1200 to A.D. 1500). Specifically, this study focused on the mode of subsistence on the northeast coast of Newfoundland as represented by the faunal assemblages from the Beaches (DeAk-1) and Inspector Island sites (DiAq-2) (see Figure 1.1). Little is known about the economic activities of the Little Passage people. To date, only two other sites have provided direct evidence of these activities in the form of preserved animal material: the Indian Point site (DeBd-1) from the island interior and the Port au Port site (DdBq-1) from the southwest coast (Devereaux 1970; Simpson 1986). As a result, the Little Passage subsistence pattern has been inferred from this meagre faunal evidence and from less direct evidence of site location, knowledge of modern resource availability, associated tool forms, and analogy to related and better known cultures situated in similar environments (Austin 1980:182; Carignan 1973:11; Fitzhugh 1972, as cited in Pastore 1985:326; Loring 1985:159; Pastore 1984:99; 1985:326; Schwarz 1984). This thesis begins to address the present lack of direct subsistence information for the Little Passage complex in northeastern Newfoundland by presenting the largest faunal sample yet to be recovered.

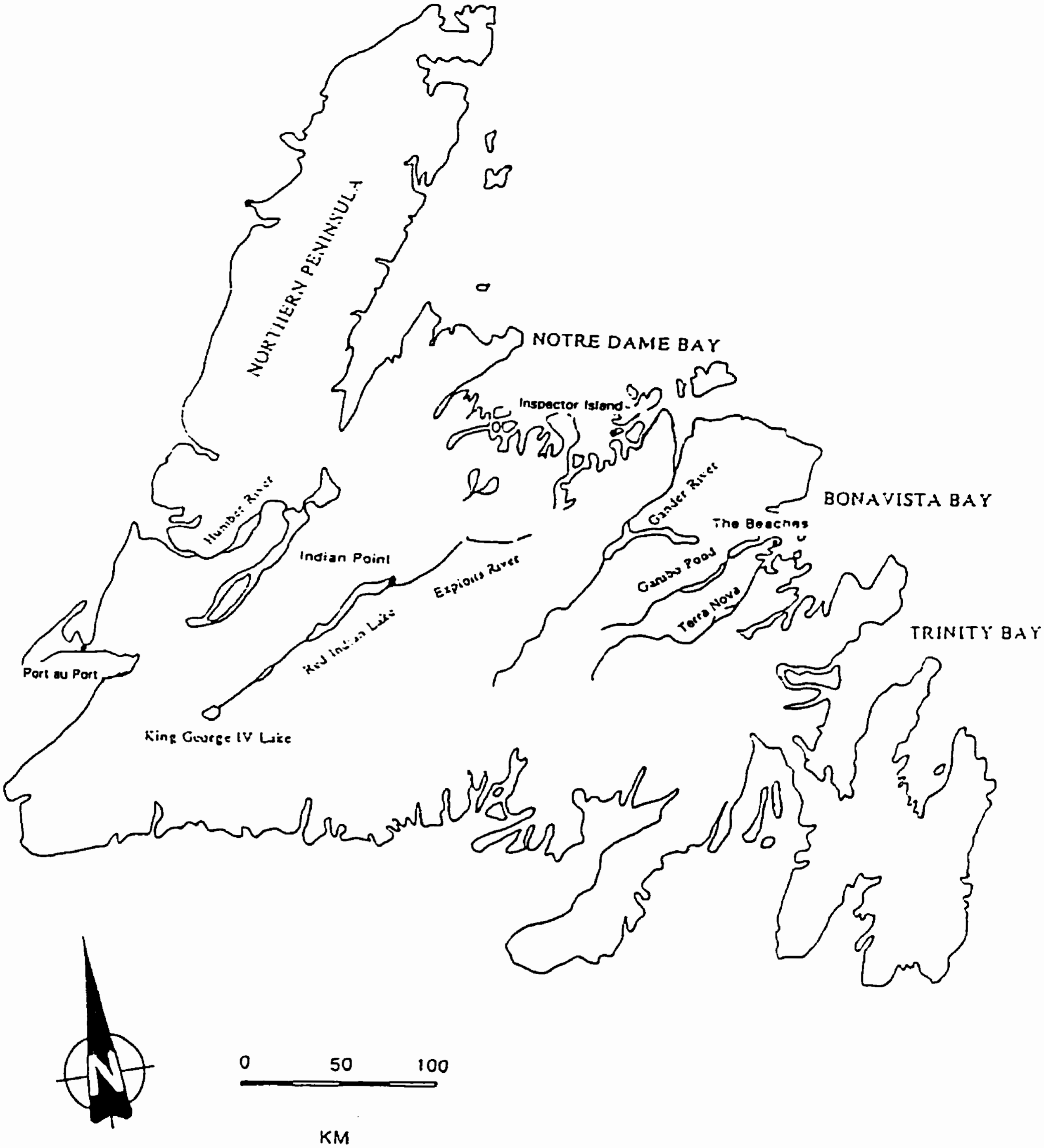



**Figure 1.1. Location of the Inspector Island and Beaches Sites, Newfoundland (from Schwarz 1992).**

The Inspector Island site in Notre Dame Bay produced a faunal assemblage comprised of 3,115 bone fragments, 807 of which were identifiable to at least taxonomic family. The material came from excellent Little Passage provenience. The Beaches site in Bonavista Bay produced a faunal assemblage comprised of 986 bone fragments of which 239 were identifiable to at least taxonomic family. This material also came from good Little Passage context. This direct evidence of the exploitation of animal species by Little Passage people made it possible to begin to evaluate current Little Passage settlement and subsistence theories in terms of how they were supported by the new faunal evidence. These new samples, combined with the tiny amount of previously existing faunal data, provide the basis for comparison as Little Passage faunal samples continue to be recovered from around the province.

In general, the analysis of faunal remains has the potential to provide more than simply a list of the animal species present in a collection. Faunal analysis can also reveal indications of season of the year a site was occupied, what habitats were utilized by a site's inhabitants, whether or not the local environment has changed since the archaeological component was created, and in what way. Analysis can also indicate how the site inhabitants were processing their animal materials and identified species can be ranked in their order of material significance to the overall means of subsistence. As analysis begins to reveal these patterns within the faunal collection one can evaluate how certain changes in the environment around the site might affect the ability of the site's inhabitants to carry out their means of subsistence. How past peoples chose and handled their animal resources reflects their belief systems and world-views and sometimes these views can be extracted from the faunal data. The new Little Passage faunal assemblages presented here were assessed for indications of all of the types of information mentioned above.

Finally, it has been demonstrated that the people of the Little Passage complex were the immediate predecessors of the historic Beothuk (Pastore 1985:323; Schwarz 1984:5:65), therefore the results of this thesis research can be used to extend present knowledge of historic Beothuk subsistence into the prehistoric period and used to better understand the effect of European contact on the Beothuk.

The following is a summary of the structure of this thesis. Chapter 2 reviews the cultural context of the Little Passage complex, establishing its relationship to other complexes within the Recent Indian Period of Newfoundland, and to cultures of the historic period in Newfoundland and Labrador. Chapter 3 reviews the literature regarding Little Passage settlement and subsistence theories. The new faunal data presented in this thesis will be used to help evaluate the usefulness of these theories. Chapter 4 describes the geographical and archaeological settings of the Inspector Island and Beaches sites and establishes the context from which the subject faunal assemblages were collected. Chapter 5 reviews the methods of identification and quantification applied to the two faunal samples.

Chapter 6 presents the results of the identification and quantification of the Inspector Island faunal assemblage. Chapter 7 discusses what the presence of these identified species represent in terms of habitat and season of exploitation and the sample was also examined for patterns of body part distribution. Chapters 8 and 9 present the results of the identification, quantification and analysis of the Beaches site faunal assemblage in the same format as was presented for the Inspector Island. Chapter 10 concludes with an evaluation of how this new faunal evidence supports current Little Passage settlement and subsistence theory as presented in the literature. As well, there is a brief discussion of the implications of this new Little Passage data with regard to our understanding of the process of decline of the descendant Beothuk population.

# CHAPTER 2

## The Recent Indian Period and the Little Passage Complex: the Cultural Context of the Little Passage Complex

This chapter discusses current understanding of the context of the Little Passage complex within the prehistoric Recent Indian Period. The evidence for a continuous, *in situ* development of a Recent Indian population in Newfoundland which includes the Little Passage complex, is reviewed, as is the evidence for the relationship of this prehistoric complex to the historic Beothuk population.

### 2.1 The Recent Indian Period (ca. A.D. 100 to A.D. 1500)

The Recent Indian period refers to the last period of Indian occupation in Newfoundland and Labrador. In Labrador this period is represented by the Daniel Rattle (ca. A.D. 200 to A.D. 1000) and Point Revenge complexes (ca. A.D. 1000 to A.D. 1650) (Loring 1989:63). In Newfoundland this period is represented by the Cow Head (ca. A.D. 100 to A.D. 800), Beaches (ca. A.D. 800 to 1200) and Little Passage (ca. A.D. 1200 to contact) complexes (Austin 1984:117).

There is growing evidence to suggest that the late prehistoric Indian cultures of Labrador and Newfoundland were in contact with each other and with that of the greater northeast Atlantic region (Loring 1985:133). For example, Ramah chert from northern Labrador has been found in contemporaneous sites throughout the region (Loring 1985:133). Also it has become apparent that lithic artifact forms are quite similar for contemporaneous sites of this period in Newfoundland and Labrador (Evans 1981; Loring 1985:133; Penney 1981). In fact, the common belief now is that the Recent Indian Period represents the continuous occupation of an Indian population in Newfoundland and Labrador, from ca. A.D. 100 up to and including the historic Beothuk in Newfoundland and the Naskapi-Montagnais in Labrador.

Settlement and subsistence theory for the Recent Indian Period in Newfoundland and Labrador has been based on site location, the presence of features in the archaeological record and scanty faunal evidence in the form of a few handfuls of burnt bone. The general consensus is that the period was characterized by a generalized subsistence strategy with a seasonal round that had a marine focus plus an interior component of uncertain significance (Fitzhugh 1974; Loring 1989).

## 2.2 The Little Passage Complex (ca. A.D. 1200 to 1500)

This late prehistoric complex was first proposed by Gerald Penney (1981, 1985), who identified a distinct Recent Indian lithic assemblage at the L'Anse a Flamme and Isle Galet sites on the south coast of the island. Little Passage sites have since been found all around the island.

Little Passage artifacts have been found in hearth and midden features; however no structural features have been found in association with diagnostic objects. The diagnostic artifacts for this complex are tiny, corner-notched and stemmed projectile points, triangular bifaces and thumbnail scrapers (Pastore 1985:323; Penney 1985:184-185; Robbins 1982:198; Schwarz 1984:1-2, 61). Little Passage lithics are frequently made from fine-grained, green and grey-green cherts (Pastore 1985:232; Penney 1985:185; Tuck 1982:211).

Stratigraphic evidence and radiocarbon dating have demonstrated that the Little Passage complex is descendant from the Beaches complex (ca. A.D. 800-1200) and directly ancestral to the historic Beothuk (ca. A.D. 1500 to 1829) (Pastore 1985:323; n.d.:7; 1989b:59). Although radiocarbon dates for Little Passage contexts range from A.D. 630+/- 100 to A.D. 1365 +/- 80 the Little Passage contexts dated with most confidence post-date A.D. 1000 (MacLean 1990; Penney 1985:186).

Further corroborative evidence for the cultural and temporal placement of the Little Passage complex has been provided by an attribute analysis of projectile points which has indicated the development of an *in situ* stylistic sequence from Beaches through Little Passage to early historic Beothuk forms (Schwarz 1984:66). Late Little Passage and Beothuk stone artifacts exhibit a strong similarity in form, both displaying tiny, triangular projectile points with narrow stems (Pastore 1989b:59; Schwarz 1984:61-62). In fact, Boyd's Cove has produced Little Passage artifact forms in an early Beothuk context (Pastore 1984:107).

There is a growing body of evidence to support an Algonkian origin for the Recent Indian population on the island. It has been observed that the Point Revenge complex in coastal Labrador and sites referred to as Little Passage on the Quebec North Shore possess stone technologies very similar to that of the Newfoundland Little Passage complex. This suggests that these Recent Indian complexes share a common cultural tradition. Because archaeologists working in Labrador believe they have demonstrated that the Point Revenge complex is ancestral to the historic Naskapi-Montagnais and modern Innu, members of the Algonkian linguistic group (Fitzhugh 1972:127; 1977:14; Loring 1985:134), it has been deduced that Newfoundland's Recent Indians are also related to this linguistic group. Hewson's (1978:146) study of Beothuk vocabularies indicates that the Beothuk spoke a form of Algonkian thus providing another piece of evidence linking the Recent Indian population of Newfoundland with that of Labrador and Quebec.

To date, the majority of known Little Passage sites are located on the coast, particularly in inner coastal locations (Pastore 1987:59; 1989b:59; Schwarz 1984:46-47). Coastal sites have been found all around the island (Austin 1984;

Evans 1982; MacLean 1990; 1991; Pastore 1982; 1983; 1986; 1989; n.d.; Penney 1982; 1985; Renouf 1993; Reynolds 1996; Robbins 1982; Simpson 1986) (see Figure 2.1). Given Little Passage, and earlier Recent Indian occupation on the coast of the Northern Peninsula, it has been suggested that there was ongoing contact between Newfoundland and Labrador. The tip of the peninsula would be the closest point between the island and Labrador (Pastore 1989).

Only five sites have been positively identified in the island interior (Devereaux 1970; Penney 1987; 1990; Schwarz 1987; 1988); however ongoing survey work in the interior continues to produce new sites. The significance of the interior portion of the Little Passage settlement pattern is not well-understood. In addition to further excavations on interior sites, the recovery of good faunal data is needed to help define the nature and extent of the interior component of the Little Passage annual settlement and subsistence pattern. Schwarz's 1992 survey of the Exploits Basin identified several lithic sites of unknown cultural affiliation, but he suspects that given their proximity to known Beothuk sites, they are of Recent Indian, probably late prehistoric origin. Schwarz (1988; 1992:39) has noted a pattern of interior sites being located in proximity to caribou crossings, suggesting that caribou exploitation was the focus of the interior occupation.

To date, reconstruction of the Little Passage way of life has been based almost exclusively on settlement pattern, the structure of archaeological sites, their associated lithic assemblages and the availability of animal and plant resources associated with occupation areas. Given the fact that most Little Passage sites are located on the coast, it has been interpreted that coastal resources played an important role in the Little Passage mode of subsistence. However, archaeologists suspect that interior resources also played a significant role in the Little Passage seasonal round and are hopeful that continued work in the Newfoundland interior will reveal this. Given this current situation, the Inspector Island and Beaches faunal assemblages provided a rare opportunity to provide some concrete evidence of Little Passage subsistence. Chapter 3 provides a detailed review of the current theories regarding Little Passage settlement and subsistence.

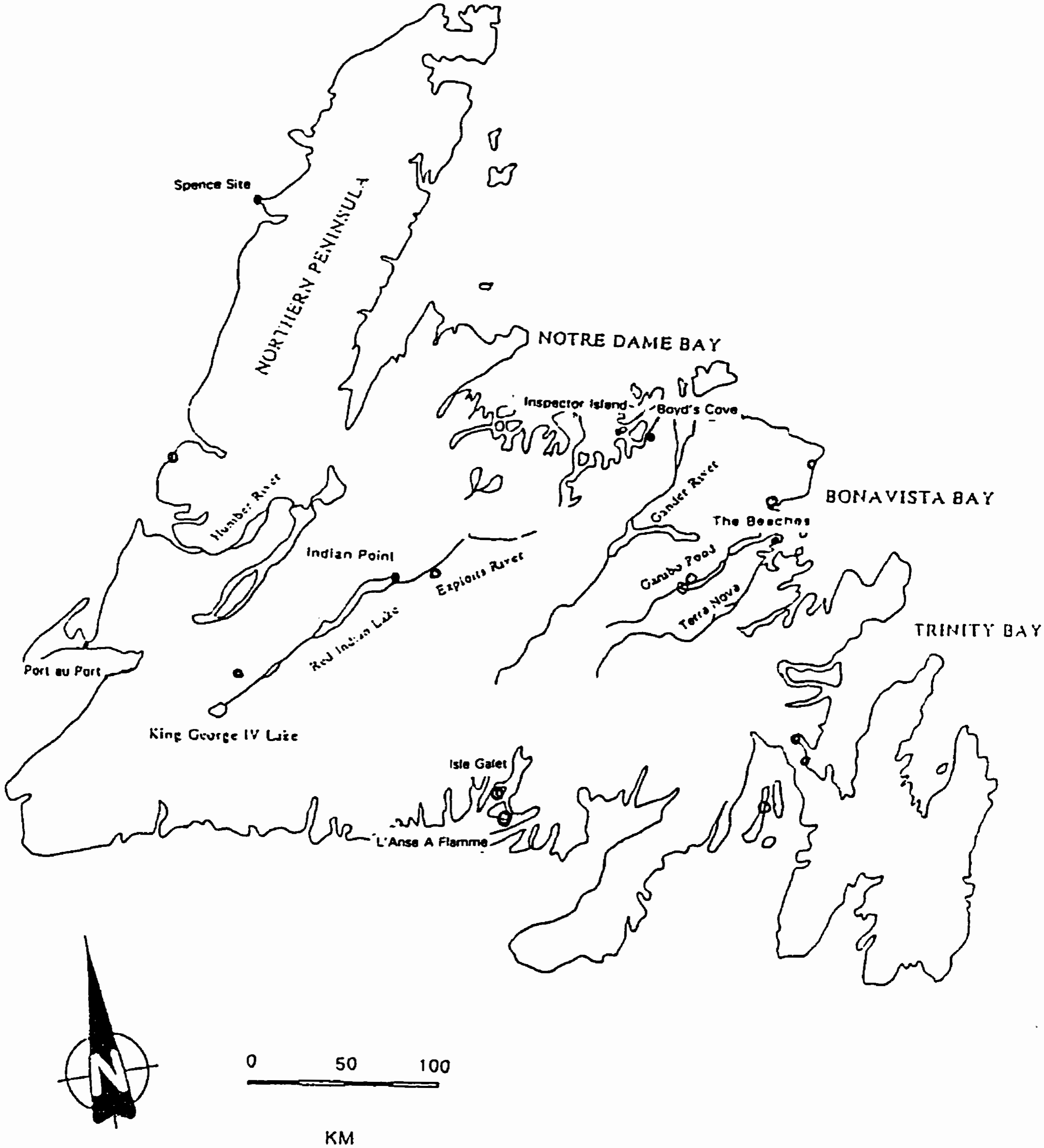



**Figure 2.1. Map of Newfoundland showing the location of Little Passage sites (adapted from Schwarz, 1992).**

# CHAPTER 3

## Little Passage Settlement and Subsistence

This chapter presents the literature regarding Little Passage settlement and subsistence. The meagre faunal data available prior to the recovery of the Inspector Island and Beaches assemblages analyzed in this thesis, is also presented.

### 3.1 Review of Literature Regarding Reconstruction of Little Passage Settlement and Subsistence

Not much is known about the Little Passage subsistence system. Acid soil conditions which exist over much of the island (Roberts 1983:118) leave most sites with little or no organic preservation. To date, only two other Little Passage sites, Indian Point (DeBd-1) and Port au Port (DdBq-1), have produced analyzable bone samples (Devereaux 1970; Simpson 1986). Without direct evidence of animal and plant exploitation archaeologists have proposed economic patterns based on site location and modern resource availability, site tool assemblages, analogy with the slightly better known Beothuk pattern (particularly for sites exhibiting both Beothuk and Little Passage assemblages), and/or analogy with the modified-interior subsistence model hypothesized for the related Point Revenge complex in Labrador.

Pastore (1989b) offers the most complete synthesis of subsistence information for the Little Passage complex. Assuming that these people were hunter-gatherers, Pastore (1989b:53) suggests that site distribution reflects a generalized hunting and fishing strategy. He reasons that although the preponderance of sites are located on the coast, many of these are inner coastal sites placed where interior and near shore resources are accessible. Access to the interior would be afforded by rivers with outlets located near the coastal site. The term inner coastal refers to a protected coastal location at the bottom of a deep bay and/or behind islands which protect the shore from direct exposure to the open ocean. As further evidence he notes that a variety of land and sea species are represented in the Port au Port faunal sample and are apparent in the Inspector Island assemblage which had not yet been analyzed at the time he was writing.

Pastore reconstructs a subsistence system based on historic and modern resource availability. This reconstruction varies by season and he notes regional variation due to local distribution of resources (Pastore 1989b:53,61,64). For example, Pastore recognizes a concentration of Little Passage sites on the northeast coast and associates this with the seasonal exploitation of migratory harp seal. He also suggests that a smaller concentration of sites on the south coast may be associated with the ice-free coast and resident harbour seal populations and possibly with winter concentrations of caribou.

Additional support for a generalized economy has been drawn from contemporaneous Point Revenge (ca. A.D. 1000 to contact) (Fitzhugh 1978:146) sites in Labrador (Pastore 1989b:59) which also tend to be placed in inner coastal locations. Fitzhugh (1972:158-159; 1978:169) has constructed a generalized economy for the Point Revenge complex based on this pattern of site location, ethnographic analogy to the descendant Montagnais population and a very little bit of faunal evidence. This "modified-interior" model is of an hypothetical annual cycle:

> ... a generalized technology and subsistence pattern primarily directed at interior hunting [which] has been modified for seasonal use of marine fauna, without the maritime specializations found in most Eskimo cultures. In this pattern winter subsistence depends on caribou hunting; during open water season, land game and birds continue to be taken, but from coastal sites, and seals become an important quarry.
>
> (Fitzhugh 1978:169)

However, there is little faunal evidence currently available with which to support this model. No fish remains have been recovered from Point Revenge sites nor is there any evidence of winter settlement and subsistence. The only additional information recovered from Point Revenge sites is the presence of boulder tent rings at outer coastal sites. Fitzhugh (1978:167-168) interprets the boulders as hold down rocks for light weight tents therefore indicating summer occupations of coastal sites.

Pastore (1989b:53) argues that a generalized subsistence strategy is more adaptive to the Newfoundland environment than a specialized marine oriented economy. Human populations dependent on the apparently rich source of marine species (such as harp seals) would have been vulnerable to the occasional fluctuations in availability of these species. This opinion is also expressed in an earlier publication (Tuck and Pastore 1985) where the emphasis is placed on the vulnerability of Newfoundland residents practising a specialized economy based on migratory species including caribou. Newfoundland's migratory species tend to be available in huge quantities for short periods of the year; however, human populations are subject to phases of great hardship or even extinction when a series of migratory species fail to appear during the annual round. Tuck and Pastore (1985:77) argue that Newfoundland residents are particularly vulnerable to the fluctuations in availability of migratory species because there are much fewer "fall-back" species available here than, for example, on the mainland.

Schwarz (1984) also proposes a generalized subsistence pattern. Through a comparison of site location and site tool assemblages he believes he sees three major types of Little Passage sites, Coastal Base Camps, Central Exploitation Camps and Special Exploitation Camps (Schwarz 1984:38-39,43). The archaeological record of Newfoundland has yet to provide evidence of Little Passage structures to support these models of hypothesized site function.

Coastal Base Camps are located in the inner coastal zone near or on prime access routes to the interior and are typified by tool assemblages containing a high proportion of projectile points and in general, a relatively high frequency of most artifact classes. The variety of artifact types is used to infer that a variety of activities took place at these sites. More specifically these base camp locations are chosen for the availability of a wide variety of resources in the immediate area for the use of individuals left at the camp while others are at special procurement sites.

Central Exploitation Camps are located in a coastal position from where several potential resources, not necessarily in the immediate vicinity, can be monitored and exploitation expeditions can be mounted in several directions. The tool assemblage is characterized by a low frequency of projectile points, a relatively high proportion of large bifaces and absence or low frequency of scrapers and/or linear, retouched and utilized flakes and/or artifacts of tool manufacture.

Special Exploitation Camps are satellites of central exploitation camps situated in proximity to a particular desired resource and are characterized by a high proportion of projectile points.

Schwarz's pattern suggests that (mainly inner) coastal resources tend to be focused on during the spring and summer months while interior resources, particularly caribou, are utilized more in the fall and winter. However, he believes the Little Passage settlement pattern as it is presently known indicates that "... the large proportion of the seasonal round [was] apparently spent on the coast" (Schwarz 1984:46). He observes that the settlement-subsistence pattern he has constructed for the Little Passage complex resembles Fitzhugh's "modified-interior" subsistence-settlement system, particularly the more coastal-oriented version hypothesized for the Point Revenge complex.

A variation on the generalized subsistence theme comes from Rowley-Conwy (1990). Rowley-Conwy observes that caribou are the only potentially significant food source available in the Newfoundland interior. He also cites references to "peak and crash" cycles in Greenlandic and Alaskan barren ground caribou populations. He admits there is no information available to indicate that such cycles exist amongst the woodland caribou populations of Newfoundland; however he speculates that they do exist and partially bases a model of Little Passage settlement and subsistence upon this type of caribou population cycle.

Rowley-Conwy (1990:25) examines the winter resources available on the Newfoundland coast and concludes that winter coastal resources combined with coastal resources stored from the previous summer would enable prehistoric populations to survive on the coast through the winter. He suggests therefore that Little Passage populations may have lived on coastal resources through those winters when caribou populations were at their minima. Rowley-Conwy expands this idea and proposes an hypothetical "idealized winter base camp" possessing the following qualities:

1. it should be located so that both caribou and seal availability could be monitored from one base;

2. it should be located so that caribou meat from fall hunting camps, seal from winter hunts and stores from the previous summer could all be transported there with a minimum effort;

3. it should provide shelter

(Rowley-Conwy 1990:26).

These winter base camps would be "...located a little way inland, on rivers or ponds offering easy access by canoe or ice travel both to the interior and to the coast" (Rowley-Conwy 1990:26). Rowley-Conwy freely admits that this proposed form of winter settlement-subsistence is highly speculative and he is aware of only one, at the time of his writing, unexcavated, site which might represent this camp type (Russell's Point, Trinity Bay). His model assumes that Little Passage populations had the means to store food similar to their Beothuk descendants and many other northern hunter-gatherers, an assumption which is difficult to prove with the archaeological evidence presently available.

The Russell's Point site has been subject to excavation since Rowley-Conwy proposed his idealized winter base camp. The site has been determined to be an early historic Beothuk occupation exhibiting hearth features and an artifact distribution suggesting tool manufacture and maintenance and primary processing of, presumably, caribou (Gilbert 1995; 1996). Gilbert believes the site is the same one recorded by John Guy in 1612. In October of 1612, Guy had observed a Beothuk community in the midst of processing freshly killed caribou. The site has yet to produce positive evidence of a winter occupation.

Results of the most recent archaeological surveys in the near coastal interior of Newfoundland lend support to the generalized subsistence pattern hypothesized by Pastore and Schwarz and in particular, Rowley-Conwy's "idealized winter base camp" (Schwarz 1987; 1988; 1994). Schwarz observed a number of Recent Indian sites located at known caribou crossings and good fishing spots in the near coastal interior of eastern Newfoundland. Schwarz (1994) is convinced that further survey of the near coastal interior of Newfoundland, that is land falling within 30km of the coast, will reveal a high frequency of sites that have been repeatedly occupied by Recent Indians including the Little Passage people. Schwarz suggests that these sites represent fall and winter occupations that were part of the most adaptive cultural response to Newfoundland's limited resources. In the fall and winter seasons the Recent Indian population occupied sites located in the near coastal interior in order to have "...access to the greatest possible diversity of terrestrial and maritime winter resources, including access to any caches of caribou meat stored after the autumn hunts" (1984:65). He contrasts this seasonal pattern to that reconstructed for the Paleo-Eskimo. He notes that Paleo-Eskimo sites exhibit a higher frequency of outer coastal locations versus inner coastal or interior locations and that these outer coastal sites represent prolonged periods of occupation. The interpretation is that the Paleo-Eskimo specialized in marine mammal exploitation, specifically the exploitation of harp seal. While the Paleo-Eskimo spent the fall in the interior harvesting caribou, they would have returned to the coast to spend the winter harvesting harp seal on their southward migration in early winter and on their northward migration in late winter and early spring. This specialized approach to subsistence left the Paleo-Eskimo more vulnerable to the harsh winter conditions and resulting fluctuations in harp seal availability.

To summarize, based on Schwarz's (1994) latest research, the expectation would be that Recent Indian sites, and in particular, Little Passage sites, would represent a generalized approach to subsistence. It would be expected that outer coastal sites would exhibit short periods of occupation in the spring for the purpose of exploiting harp seal. It would be predicted that inner coastal sites would exhibit exploitation of a variety of resources available in the summer. Near coastal interior sites would be expected to exhibit the fall exploitation of caribou and winter exploitation of marine and/or caribou resources. The near coastal interior sites would have provided a central location from which to monitor both interior and coastal resources thus providing the greatest chance of finding some means of subsistence during the harshest season of the year.

## 3.2 Analysis of Little Passage Faunal Assemblages Prior to the Inspector Island and Beaches Assemblages

Two Little Passage faunal assemblages, from the Port au Port and Indian Point sites, were analyzed prior to the Inspector Island and Beaches samples. Table 3.1 summarizes the faunal information obtained from these two sites.

**Table 3.1 Summary of faunal data from the Port au Port site.**

| Species | Number of Bone Fragments |
|---|---|
| caribou | 21 |
| beaver | 39 |
| marten | 2 |
| bald eagle | 8 |
| waterfowl | 4 |
| auk species | 2 |
| Total | 70 |

Simpson concluded that the Little Passage population at the Port au Port site appeared to focus on non-marine species rather than marine resources (represented by two elements from a small auk species) (Simpson 1986:203-209).

Simpson proposed that the small auk might be an indicator of summer occupation of the site but agreed that his data would not allow him to rule out occupation during other seasons of the year. There really was not enough data available to support or refute the generalized subsistence model proposed by other researchers. As summarized in Table 3.2, the faunal assemblage from the Indian Point site indicates that terrestrial species were taken.

**Table 3.2 Summary of the faunal data from the Indian Point site.**

| Species | Number of Bone Fragments |
|---|---|
| caribou | 33 |
| beaver | 2 |
| small mammal | 2 |
| Total | 37 |

(Stewart 1971:9).

The material did not provide seasonal information. Again, the sample was very small and there was no indication of how representative it was of the range of activities carried out by Little Passage populations while they inhabited the island interior or of how much emphasis was placed on the exploitation of interior resources during the entire annual cycle.

## 3.3 Summary of Reconstruction of Little Passage Settlement and Subsistence Prior to Analysis of the Inspector Island and Beaches Faunal Assemblages

The general consensus is that the people of the Little Passage complex practised a generalized approach to the exploitation of both marine and terrestrial resources. Based on site location and proximity to known resources it appears that the Little Passage subsistence pattern consisted of a seasonal round with coastal and interior components. The significance of the interior component of the Little Passage seasonal round is gradually becoming apparent as archaeological investigations begin to concentrate on the Newfoundland interior.

Analysis of the faunal material from the Inspector Island and Beaches sites provides the first significant body of data with which to test various aspects of the hypothesized generalized subsistence strategies summarized above, particularly as they apply to northeastern Newfoundland.

# CHAPTER 4

## Context of the Inspector Island and Beaches Sites and their Little Passage Faunal Assemblages

This chapter presents the geographical, historical and archaeological context of the Inspector Island and Beaches sites. The Little Passage faunal assemblages which form the basis of this thesis are then introduced. This introduction to the faunal assemblages includes discussion of exactly where and how the thesis material was collected and what it is believed to represent within the context of the Inspector Island and Beaches sites. The sites are then considered in terms of what they appear to represent given the non-faunal site information such as lithic assemblage, and site features.

### 4.1 Inspector Island (DiAq-1)

#### 4.1.1 Geographical Context of Inspector Island

Inspector Island is located in Notre Dame Bay on the northern coast of Newfoundland (see Figure 4.1). This inner coastal island is surrounded on three sides by Twillingate to the north, Chapel to the east and Coal All island to the south deep in the eastern portion of Notre Dame Bay. While the island is protected from the open ocean its west side is exposed to a smaller piece of open water which extends several kilometres west to Long island. The actual Inspector

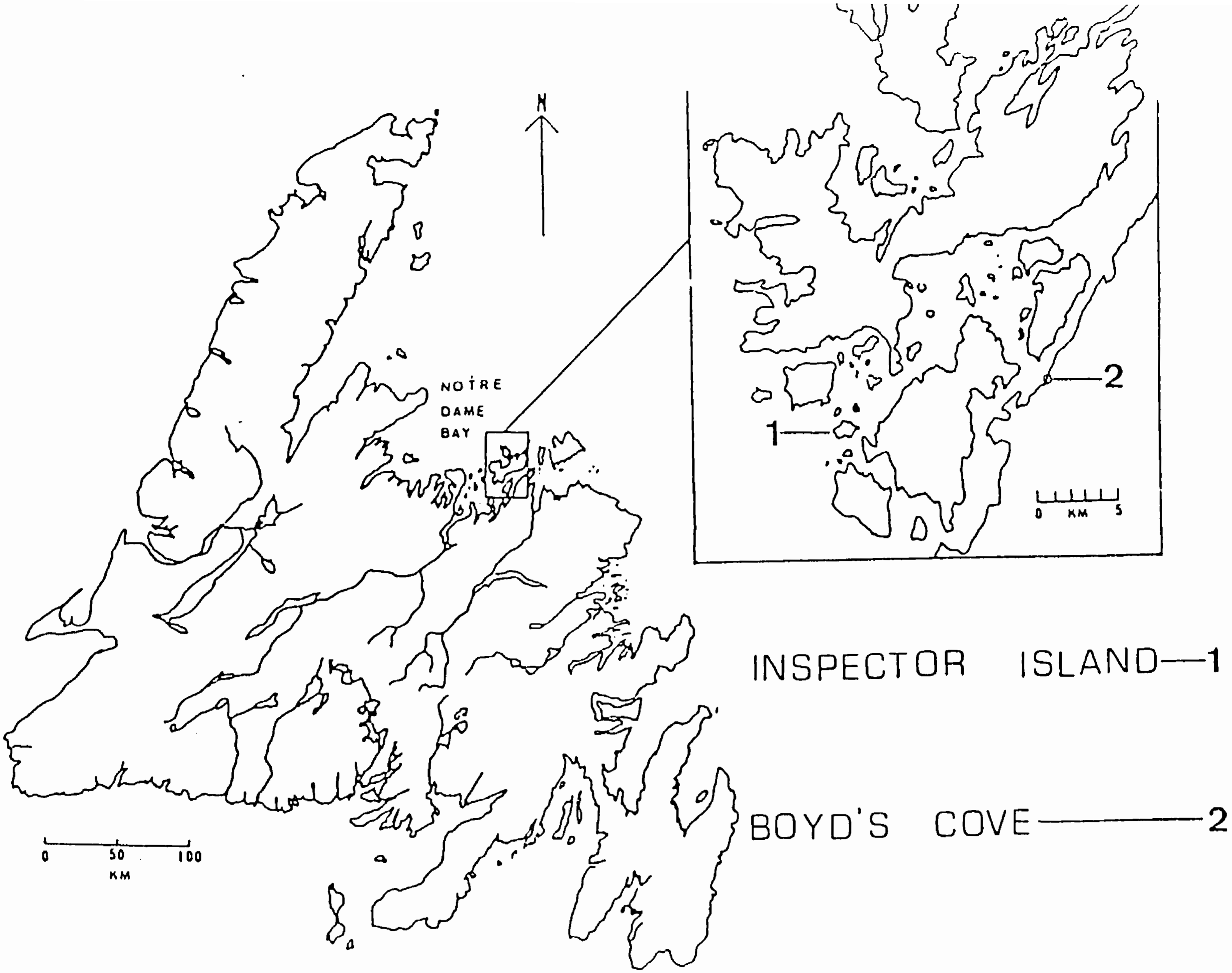



**Figure 4.1. Location of the Inspector Island site (DiAq-1) in Notre Dame Bay identified by Pastore during an archaeological survey of Notre Dame Bay in 1981 (Pastore 1989).**

Island site is located on a shallow cove on the southwest corner of Inspector Island, situated so as to have a clear view to Long island. The site sits up on a terrace fronted by an eroding beach. The site is accessed by boat from the nearest community, Comfort Cove, located less than 1km to the south (Pastore n.d.:4).

Inspector Island exhibits large bedrock outcroppings, especially along its shore. Some of the outcroppings slope fairly gently into the shallow cove at the west end of the island while vertical rock cliffs characterise other parts of the shoreline. Despite its rocky nature there is enough soil to support a modest growth of forest and according to local informants the island has been capable of growing some large coniferous trees (Pastore n.d.:14).

While there are several small rivers that empty into Notre Dame Bay along the Newfoundland coast closest to Inspector Island, the nearest major access route to the Newfoundland interior is by way of the Bay of Exploits and the Exploits River. The mouth of the Bay of Exploits is located approximately 40km to the southwest of Inspector Island. The Exploits River empties into the southernmost tip of the Bay of Exploits an additional 30km to the south. The Exploits River provides a navigable route to Red Indian Lake which lies in the heart of Newfoundland's interior. This is an important observation because, as will be discussed in Chapter 10, it is well-documented that the Beothuk descendants of the Little Passage people used the Exploits river to get to migratory herds of caribou and later, to take up residence on Red Indian Lake.

### 4.1.2 Archaeological Context of Inspector Island

The site was discovered by Dr. Ralph Pastore of the Memorial University of Newfoundland Archaeology Unit, during the 1981 Beothuk Project survey of eastern Notre Dame Bay (Pastore 1982). As part of an ongoing study of the Beothuk presence in Notre Dame Bay Pastore supervised work on the site during the 1982, 1986 and 1987 field seasons. Excavations recovered artifacts of Maritime Archaic, Paleo-Eskimo, Little Passage and Beothuk origin; however site research focused on areas representing the Recent Indian occupation.

In 1982 excavations approximately 6m east of the beach embankment identified a temporary Beothuk structure comprised of hold-down rocks arranged in a U-shape pattern (Feature 3) (see Figure 4.2). The structure measured 6m x 4m. Two Little Passage components (Levels 3 and 5) were discovered lying below the Beothuk occupation (Feature 3) (Pastore 1989a:260). The upper portion of Level 3 contained a mix of Beothuk and Little Passage artifacts but the pure Little Passage faunal and lithic material could be sorted out vertically with confidence. Charcoal from two hearth features from the Little Passage Level 3 were dated at 610 +/-60 BP[1] (Beta 6730) and 690 +/-40 BP (Beta 3938) which fell well within the Little Passage time period. The bottom cultural layer (Level 5) was identified

[1] Uncalibrated and based on a half-life of 5568 radiocarbon years.

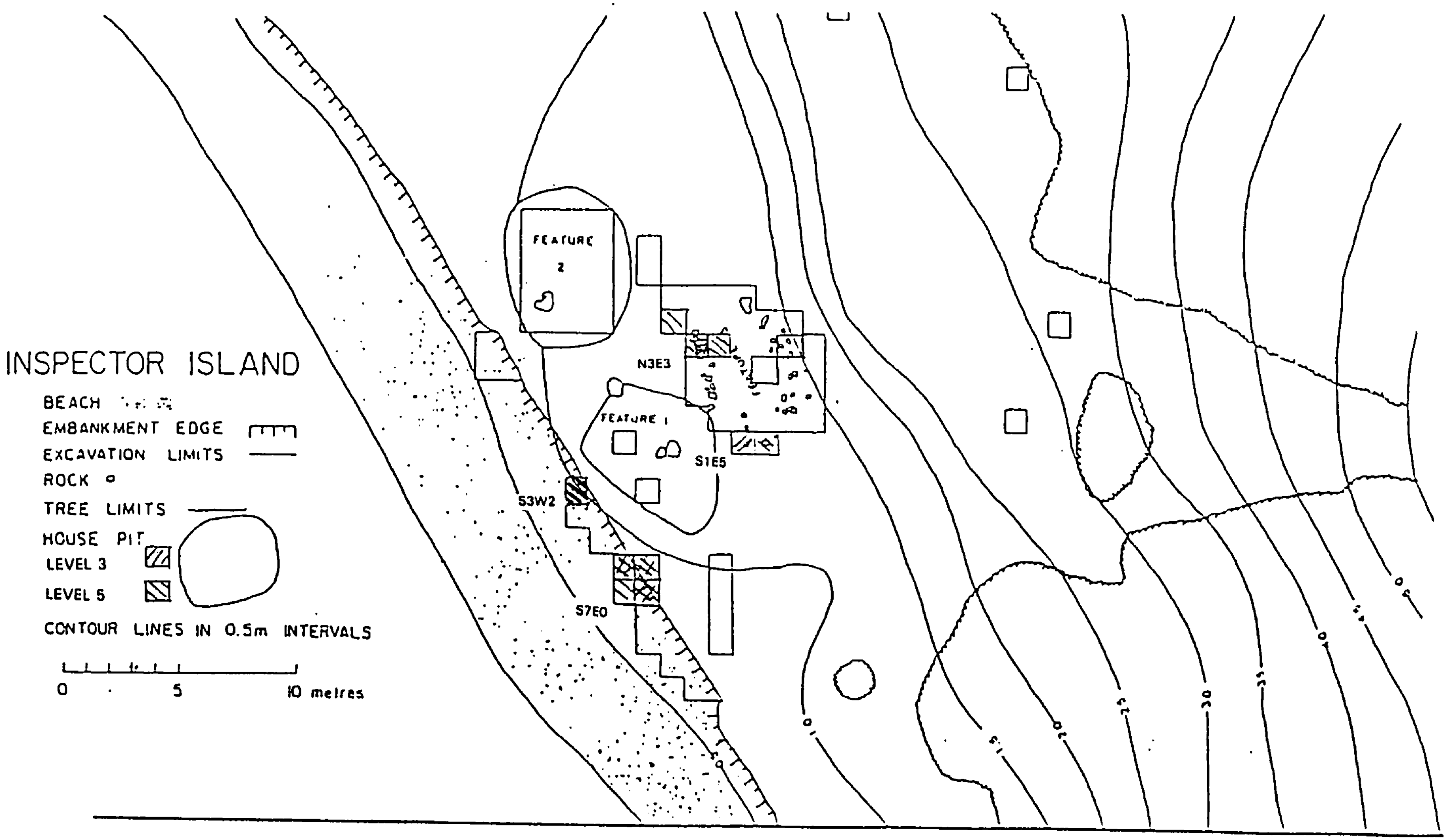



**Figure 4.2. Inspector Island (DiAq-1) site map (Pastore n.d.).**

under a layer of sterile, wind-blown sand. Included in Level 5 were lithics diagnostic of the Little Passage complex. Levels 3 and 5 located below Beothuk Feature 3 (units N3E3, N3E4, N4E2, N2E6, N3E7, S1E6 and S1E5) contained bone fragments that were believed to have been preserved because they were accompanied by soft-shell clam fragments (Pastore n.d.:2). The faunal material from these units constituted a small portion (approximately 4%) of the entire assemblage collected from Little Passage provenience and analyzed for this thesis.

During the 1986 field season it was observed that extensive erosion was occurring along the western edge of the site. In fact it was reported that ice pans riding up onto the beach had eroded away an estimated $15m^2$ of the site (Pastore n.d.:6). Examination of the embankment during the 1986 field season revealed the presence of the two Little Passage culture layers, Levels 3 and 5, believed to be continuous with those levels first identified during the 1982 field season lying below Feature 3. As the exposed portion of the site contents was considered in danger of being destroyed within the coming year the material was recorded and collected.

The following 1987 field season focused on preparing the eroding embankment for the installation of a permanent rock wall to prevent further erosion of the site. Upon excavation of this eroding bank a Beothuk house pit wall (Feature 1) was revealed and below this wall lay an undisturbed Little Passage midden.

The midden was considered to be of Little Passage origin for the following reasons:

1) The midden lay undisturbed below a wall of Beothuk house pit Feature 1.

2) Diagnostic Little Passage artifacts were present.

3) There were no iron artifacts present.

The bone in the midden exhibited an "excellent" state of preservation (Pastore n.d.:7). This state of preservation was attributed to the presence of shellfish remains which buffered the naturally acidic soil. The midden matrix from S6E0 Level 3 was water-screened using 2mm mesh. This water-screened sample recovered hundreds of fine fish bones also in a very good state of preservation. All told, the faunal material collected from this undisturbed midden consisted of about 2,424 bone fragments or approximately 78% of the sample analyzed for this thesis (S6E0/S6E1/S7E1 Level 3). An additional 551 fragments or approximately 18% of the study sample came from Level 5 units S6E1/S6E0/S7E1/S7E0 located below the midden.

In total, an area of about $3m^2$ of the midden was excavated. The full size of the midden is unknown. An unknown portion of the midden was eroded on the west side and it was not determined how far the midden extended under house pit Feature 1, off to the east. So it was not possible to estimate what portion of the midden was represented by the faunal sample.

To summarise, Inspector Island produced a sample of approximately 3,115 faunal elements from excellent Little Passage context which provided the basis for the original research portion of this thesis. About 78% of the material came from a Little Passage midden located below Beothuk house pit Feature 1 (S6E0/S6E1/S7E1 Level 3). An additional 18% came from Level 5 units located below the midden feature. Roughly 4% came from the 1982 Little Passage component located below Beothuk tent ring Feature 3.

The Little Passage occupation discovered below the Beothuk tent ring Feature 3 was considered "extensive" (Pastore 1989:260). Faunal and lithic material are considered to have been scattered over the immediate living area of the Little Passage inhabitants. The Little Passage presence below Feature 3 covered a minimum of $36m^2$. The two levels of occupation, Level 3 and Level 5, separated by the sterile, windblown sand layer clearly indicates that Little Passage people visited the site over a period of time. The two hearth features found in level 3 produced virtually contemporaneous carbon dates (610+/- 60 BP and 690 +/- 40 BP). However, there is no evidence of Little Passage shelter construction at the site suggesting that the prehistoric inhabitants were staying for short periods of time and using temporary or insubstantial shelters such as tents which often do not leave a tangible archaeological record. Besides suggesting a short-term occupation of the site, lack of evidence of Little Passage structures could also suggest that the Little Passage inhabitants were visiting the site during times of the year when the weather did not require the people to build substantial protection from the elements. The fact that later Beothuk visitors to the site chose to use a tent-like structure for shelter, lends support that a less substantial shelter was used on the site at some time. The western exposure to the open water would have been a rather unattractive aspect to the site during the cold weather months. Considering that the prevailing winds are usually from the west or southwest (Montevecchi and Tuck 1987:202), this would be a boon in the summer months when trying to escape the clouds of annoying insects, but quite a demand on energy reserves in the inclement weather as the wind is free to gather strength and whip up the waves as it travelled across the open water.

The depth and length of the Little Passage midden Level 3, located under Beothuk house pit Feature 1, suggests that people took some time to accumulate this waste area and so the faunal sample may represent repeated visits to the site within a fairly compact period of time. The definition of Level 3 and Level 5 implies that at some time there was a break in the usage of the midden, and the whole site since the break between the levels appears to have occurred across the whole site.

### 4.1.3 Examination of the Little Passage Lithic Assemblage from Inspector Island

Table 4.1 summarises the lithic assemblage of unquestionable Little Passage provenience from Inspector Island. At the time of writing, the lithics had not been subject to formal analysis. Pastore (personal communication) provided an informal list of lithics from the bottom of Level 3 and all of Level 5 that had been sorted into artifact bags during excavation. The flake bags had yet to be sorted and quantified. This lithic assemblage is known to be an under-representation of what was believed to be recovered, given the possibility that some artifacts (in particular, linear flakes, retouched flakes and flake tools) remained in storage in flake bags, waiting to be identified. In general, the lithic tool assemblage is small; Level 3 contained a minimum of 50 fragments while Level 5 contained a minimum of 7 fragments. The lithic summary shows that a variety of lithic forms were present in the Little Passage context, particularly in the Level 3 occupation. Projectile points and biface material (fragments and whole specimens) occurred with virtually equal frequency. Together these two tool forms outnumbered other tool forms by about 10 to 1. The number of core and core fragments, combined with linear and thinning flakes suggest an equally significant tool manufacture and/or tool maintenance aspect to the lithic assemblage. The biface fragments in company with a scraper, utilized and retouched flakes and retouched linear flakes

**Table 4.1. Summary of Frequency of Tool Forms from the Little Passage Component of Inspector Island.**

| Form | Number of Specimens | |
|---|---|---|
| | Level 3 | Level 5 |
| **Tools** | | |
| Projectile Point | 9 | 1 |
| Biface - whole | 3 | 2 |
| Biface - fragments | 11 | 4 |
| Triangular Biface | 1 | |
| Scraper | 1 | |
| Core Tool | 1 | |
| Flake Tool | 1 | |
| Utilized Flake | 1 | |
| Linear Flake Retouch | 2 | |
| Retouched Flake | 1 | |
| Bone Awl | | 1 |
| **Total Number of Tools Fragments** | 31 | 8 |
| | | |
| **Evidence of Tool Manufacture and/or Maintenance** | | |
| Biface Preform | 1 | |
| Thinning Flake | 2 | |
| Core | 6 | |
| Core Fragment | 2 | |
| Linear Flake | 8 | |
| **Total Manufacture/Maintenance** | 19 | 0 |

combine to suggest the presence of some butchering and hide processing activities during the Level 3 occupation. The projectile points are interpreted to represent readiness for hunting activities. To summarise then, the presently under-reported lithic assemblage from Level 3 suggests that the Little Passage inhabitants of Inspector Island may have been doing a little bit of everything, hunting, bringing back the prey and processing it at the site and preparing tools for the hunt and/or the processing of the prey. Making and repairing tools while waiting for seal or whales to appear would be a practical use of time.

The Level 5 lithic assemblage contained only 7 fragments. There were 6 bifaces or biface fragments and one projectile point. The tiny assemblage tentatively suggests that, in the absence of scrapers or utilized flakes, flake tools, or retouched linear flakes, the biface fragments may represent spear-like projectile points for hunting, or knife blades for primary butchering of game to make them more manageable for transport, as opposed to representing knife blades used in conjunction with scrapers for skinning and hide processing. This interpretation would not conflict with the presence of the single small projectile point, although it could suggest that the two forms were used to hunt species of very different dimensions.

### 4.1.4 Possible Site Function in Light of the Non-Faunal Data

The Inspector Island site is intermediate between a complete inner coastal and outer coastal location. Animal and plant species available on the island and in the waters immediately surrounding it, are the same as those available on the Newfoundland shores and adjacent waters of Notre Dame Bay. The island itself would not be able to offer as steady or plentiful supply of terrestrial mammals as the main island of Newfoundland could. While terrestrial species such as beaver, black bear, river otter, pine marten and caribou can swim or walk across the ice to Inspector Island, the island of Newfoundland provides a greater variety and quantity of vegetation for food and cover as well as access to more freshwater and freshwater habitat than does Inspector Island. However, many marine resources would be available near the site.

In late December and again in late February, the Inspector Island site could provide a convenient point from which to monitor the arrival of harp seals to the Newfoundland coast. The site's location would have been closer to the harp seal habitat than would a site on the shore of Newfoundland proper. In addition, in the spring and summer this location would have provided access to a wide variety of resident and breeding migratory birds and their nest sites on exposed cliffs right on Inspector island and its neighbouring islands. In the warmer months harbour seals would find the rock outcroppings along the Inspector Island shore a convenient place to haul out and sunbathe. Mussels and clams could be obtained all year round but it would be very hard work in the winter conditions. A spring and fall shellfish exploitation would be most likely, before and after the summer period when the shellfish could be toxic. The shellfish could be found at low tide attached to the rocks by the shore or in the sandy bottom offshore.

This intermediate coastal location would also allow the site inhabitants to monitor the movements of other people not just potential animal resources. Looking to the west one might be able to catch a glimpse of any boats heading for the Bay of Exploits and the Newfoundland interior as they came from the more western portions of Notre Dame Bay. The traffic would be funnelled down towards the Bay of Exploits.

In terms of access to the interior of Newfoundland, a trip from Inspector Island would be quite long to get to the mouth of the Exploits River and proceed down it any distance. In comparison to following the ins and outs of the inner coast line, however, a boat trip launched off the west end of Inspector Island and directed on a virtually straight southwesterly line would be a more direct trip to the Bay of Exploits.

The lithic assemblage in combination with site location would not be out of keeping with Schwarz's central exploitation camp. He projected that such a camp would take a coastal position where several potential resources, not necessarily in the immediate vicinity, could be monitored and from where exploitation expeditions could be mounted in several directions. Inspector Island is half way out to the harp seal herds and passage ways for whales, and sits in and amongst the smaller concentrations of seabirds nesting on rocks and cliffs, and it is a long paddle to the interior via the Bay of Exploits to check on the migration of the caribou. The lithic data roughly resembles Schwarz's central exploitation camp, although an argument could be made for a variety of activities taking place at the site. While the rough counts for projectile points and bifaces for level 3, at least, are virtually equal, the scraper, linear, retouched and utilized flake forms are only represented by single examples as predicted in his model. The sparse Level 5 lithic assemblage resembles Schwarz's hypothesized tool assemblage for the central exploitation camp a little more closely. The Level 5 assemblage exhibits a low frequency of projectile points, relatively high proportion of large bifaces and no scrapers and/or linear, retouched and utilized flakes and/or artifacts of tool manufacture. However, there was a single bone awl in this assemblage which could be associated with the working of hides. A relatively high proportion of large bifaces in the absence of hide processing could suggest primary butchering of prey or use of spears for obtaining large game.

If Inspector Island were a central exploitation camp the question would then be where were the associated coastal base camp and special exploitation camps. While special exploitation camps would be expected to occur on the shores of the most outlying islands in Notre Dame Bay placed in association with the passing of the harp seal herds, such a site has yet to be identified. Boyd's Cove lying about 12km to the southeast of Inspector Island, on the shore of Notre Dame Bay could fulfil the hypothesized role of a coastal base camp. This site is the nearest Recent Indian site location with a known Little Passage component. The Boyd's Cove site is known to have a continuous Recent Indian occupation from the Beaches complex up to a late seventeenth century Beothuk occupation. Unfortunately, the site has yet to produce a radiocarbon date from certain Little Passage context in order to establish some sense of contemporaneousness with Inspector Island. However, the site's inner coastal position and evidence for substantial occupation would fill some of the requirements for the hypothesized coastal base camp function. While the Boyd's Cove site may not be the coastal base camp associated with Inspector Island, it could be used to suggest what might be expected in a coastal base camp faunal assemblage in the Notre Dame Bay region.

Boyd's Cove's Beothuk component exhibits several substantial house pit structures representing occupation over a prolonged period of time. Occupied houses sat adjacent to abandoned house pits which were subsequently used as middens (Pastore 1985). While the prehistoric faunal assemblage was of mixed provenience and considered an unreliable indicator of prehistoric faunal exploitation, the results of analysis of the Beothuk midden material was of interest and worth examining.

Cumbaa (1984) reported a wide variety of animal species were present in the various midden faunal assemblages. Mollusc shell was mixed in with the bone assuring its preservation. He concluded that the majority of "meat" resource would have been supplied by bear, followed by either caribou or seal species. Cumbaa had positive evidence to support faunal exploitation from April until November at the earliest. He used caribou tooth eruption and wear, the presence of several Canada geese bones exhibiting medullary bone indicating the bird's nesting season and the presence of smelt bone where smelt are known to run from late April through May and sometimes into June. However, there is no way to prove that the Beothuk did not occupy the site during the whole year. The faunal data does support a coastal base camp function for the Beothuk component of the Boyd's Cove site. Of course it must always be kept in mind that Boyd's Cove Beothuk component will exhibit the influence of contact with Europeans and that it is not known how this would affect the faunal assemblage. In particular, it is not known how this Beothuk faunal assemblage would differ from its prehistoric form.

### 4.1.5 Expectations for the Faunal Data from Inspector Island

In general, if Inspector Island played a central exploitation camp role in the Little Passage seasonal round, then one would predict that its faunal assemblage would contain species that were available more conveniently to this site location than from an hypothesized coastal base camp. One would look for evidence of exploitation of at least one species that represents some significant quantity of resource, whose availability could be monitored from this site position. One might expect body region patterns that suggest primary butchering of animals prior to transport back to the base camp. A central exploitation camp might exhibit rather tight periods of seasonal occupation concurrent with the availability of specific animals, it may have been used more than once a year, but in distinct seasons; possibly with repeated annual visits.

If Inspector Island represented a central exploitation camp to Boyd's Cove's coastal base camp function in particular, then it might be expected that the faunal data would show the presence of some subset of the Boyd's Cove species list. Specifically it would be expected that Inspector Island's assemblage would contain outer coastal oriented species which would have been more convenient to monitor and obtain from Inspector Island than from Boyd's Cove. Also one might expect to see body regions at the Inspector Island site that were missing at the Boyd's Cove site. Such body region patterning might suggest primary butchering prior to transporting the resource back to the coastal base camp.

In Chapters 6 and 7 the Inspector Island faunal assemblage will be presented and analyzed. In Chapter 10 these results will be evaluated to see how the faunal evidence supports or refutes the Little Passage usage of the Inspector Island site as a central exploitation camp as suggested by the non-faunal site data and current Little Passage settlement and subsistence theory.

## 4.2 The Beaches Site (DeAk-1)

### 4.2.1 Geographical Context of the Beaches Site

"The Beaches" is located in the centre of the western shore of Bonavista Bay on the east coast of Newfoundland (see Figure 4.3). It can be reached by boat from the village of Burnside which is the nearest community. Burnside is located a little more than 10km to the southeast of the Beaches. There are about 10km of islands and protected waterways buffering the Beaches site from the open ocean of Bonavista Bay. The site itself lies on a low point of land at the foot of a steep talus cliff which defines the site's northern border. The site is bordered by a gravel beach on its east and south sides. At low tide this point of land extends eastwards in the form of a sandbar which connects to an island about 225m off shore (see Figure 4.4). Local informants report that the sandbar was once part of much wider band of soil which supported a grassy meadow. Local residents were known to have harvested the grass for hay (MacLean 1991: personal communication).

The Beaches is located about halfway along the coast between two major rivers that provide access to the Newfoundland interior. The Gambo River is located at the bottom of Freshwater Bay to the north of the Beaches. The Terra Nova River is located at the bottom of Alexander Bay to the south. A trip following the coast by boat would be about 30km to the mouth of the Gambo and about 25km to the

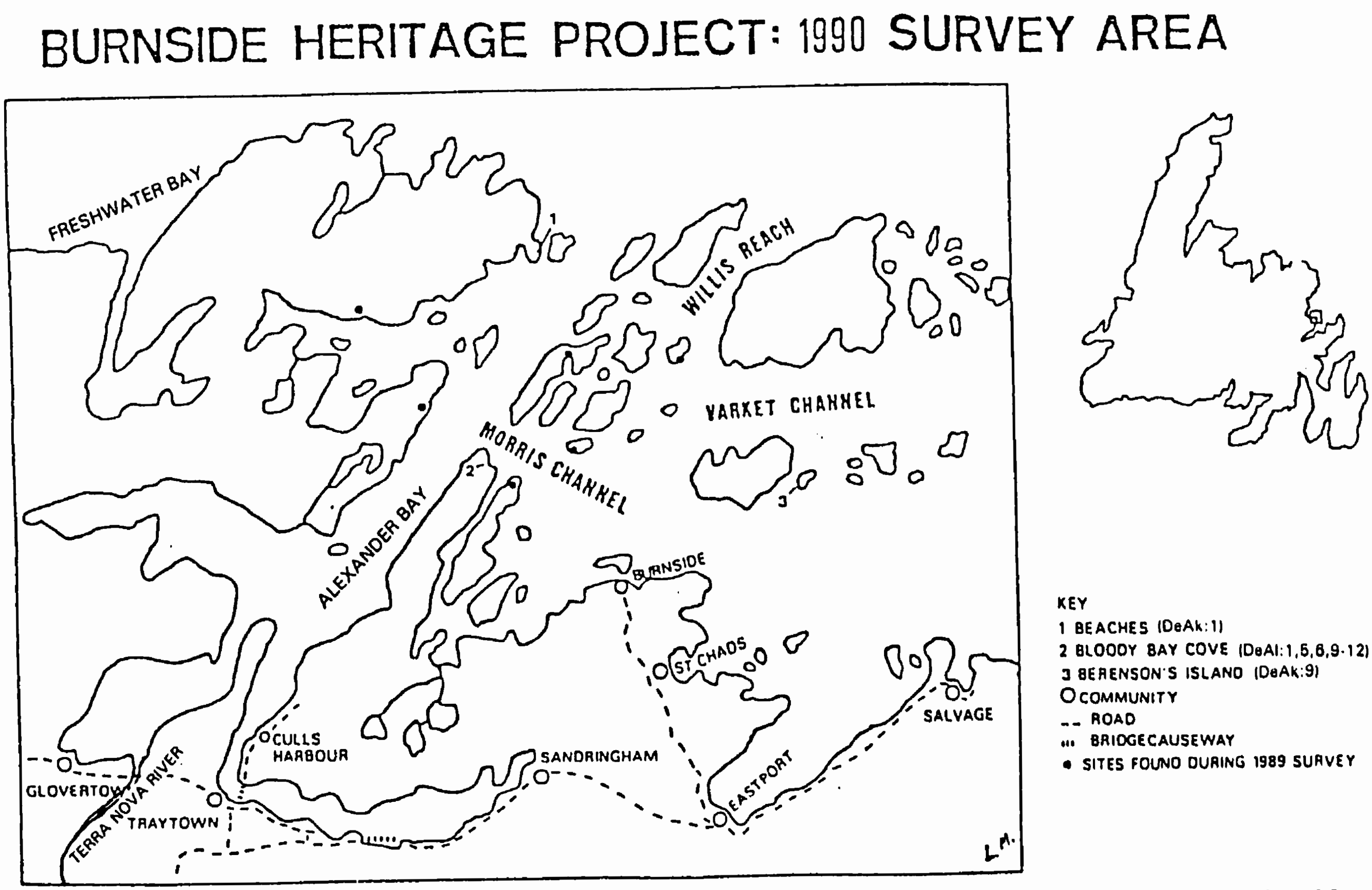



**Figure 4.3.** Location of the Beaches Site (DeAk-1) in Bonavista Bay as well as archaeological sites identified by MacLean during the 1989 and 1990 survey of southwestern Bonavista Bay for the Burnside Heritage Project (MacLean 1991b).

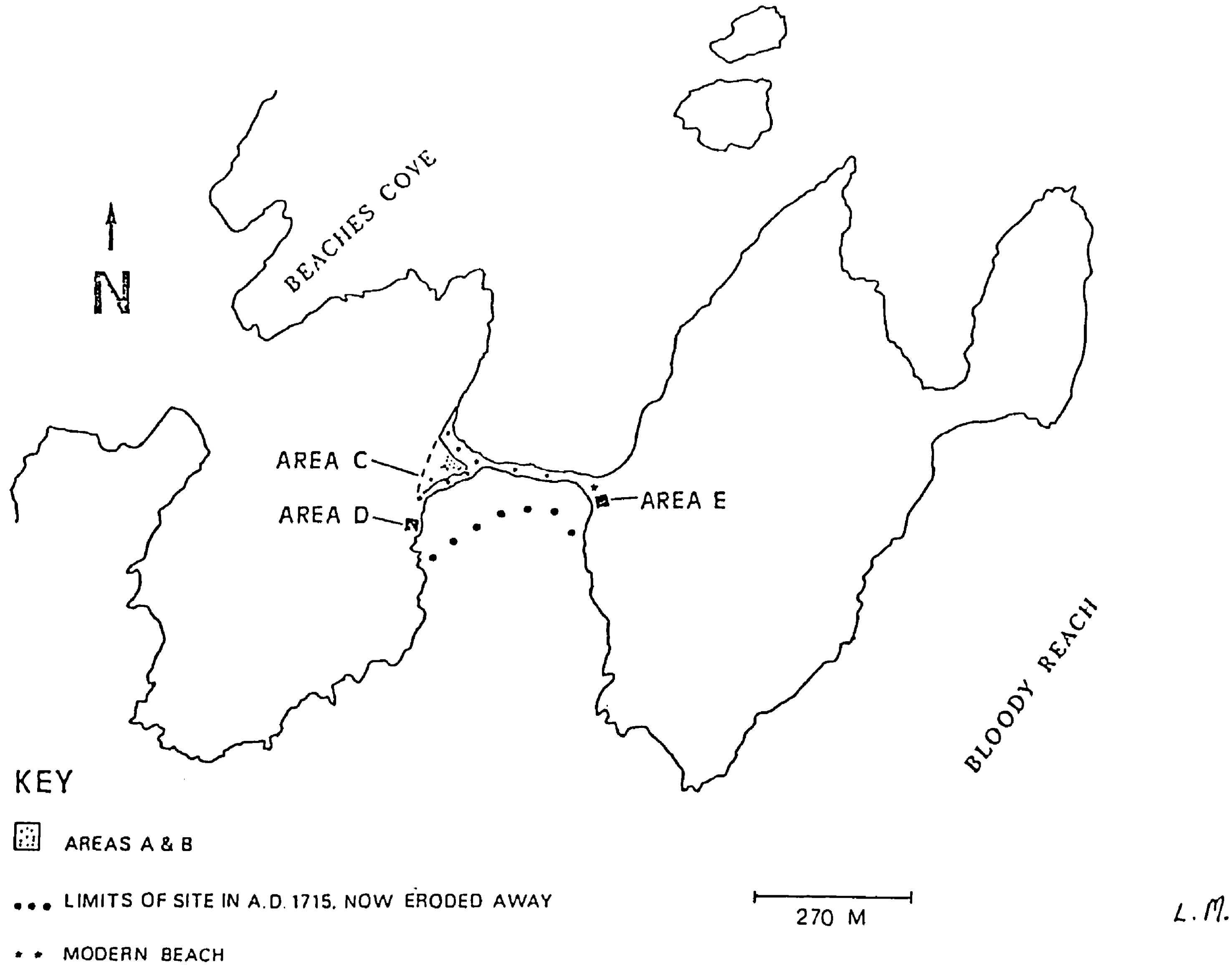



Figure 4.4. Illustration of the physical structure of the Beaches Site (DeAk-1) (MacLean 1991b).

mouth of the Terra Nova.

### 4.2.2 Archaeological Context of the Beaches Site

The Beaches is a large multi-component site having been occupied by Maritime Archaic Indians, Groswater and Dorset Paleo-Eskimos and Beaches, Little Passage and Beothuk Recent Indians. The site was first described by Lloyd in 1876 (Lloyd 1876, cited in MacLean 1991a). At this time the site covered a larger area of land. What is now described as the sandbar, was at that time a wider strip of land covered in a grassy meadow. Lloyd observed nineteen Beothuk house pit features. The site has undergone a great deal of erosion since the late nineteenth century so that now only eight of the original nineteen house pits can be accounted for.

Devereaux (1969) carried out the first archaeological investigation of the site for the province of Newfoundland in 1965 at which time she observed 4 Beothuk house pits. Devereaux's excavation of an eroding bank to the east of the house pits produced artifacts indicating the presence of Maritime Archaic, Paleo-Eskimo as well as Recent Indian artifacts. Two of the Beothuk house pits and some of the surrounding area were also sampled during this visit. A Beothuk midden feature from inside one of the house pits (House Pit 4) produced faunal remains which, at the time, were interpreted as indicating a March to fall occupation (Devereaux 1969). Species identified included juvenile harp and harbour seals, caribou, black bear, Canada goose and cormorant. While the black bear and caribou could be obtained anytime of year, the juvenile harp seal would have only been available from late February to the end of April, and juvenile harbour seals would have been available from May and June until roughly the end of the summer. Cormorant and Canada goose are considered breeding migrants to the area, arriving in the spring and leaving in the fall. A clustering of faunal exploitation during the period from (late February) March to the fall is supported by the data.

Paul Carignan carried on field work in the Bonavista Bay region for the Archaeological Survey of Canada in 1972 and 1973 which included further excavation at the Beaches site (Carignan 1975). Excavations were conducted in three general areas on the site, along the eroding bank investigated by Devereaux, in the tidal zone to the east, and in the area between the eroding bank and the cliff running along the north side of the site. Carignan's efforts uncovered an additional 3,500 square feet to Devereaux's 225 and also produced artifacts from all the cultural groups listed above. Charcoal samples found in association with the Maritime Archaic and Paleo-Eskimo site components produced radiocarbon dates that agreed with the accompanying material culture.

In the fall of 1989 the Beaches was visited by archaeologist Laurie MacLean. MacLean's purpose was to evaluate the site's potential for further research (MacLean 1990). This time investigations at the Beaches site were part of an assessment of heritage resources in southwestern Bonavista Bay conducted for a local economic development project (Burnside Heritage Project). In particular the project's basic theme was to "...provide an interpretive context for prehistoric and historic people's use of locally available resources" (MacLean 1991:8).

MacLean identified the presence of eight Beothuk house pits and discovered a large bone-bearing midden deposit (Feature 4) at the north end of the site (see Figure 4.5). The presence of a quantity of mollusc shell buffered the otherwise acidic soil and allowed the accompanying bone to be preserved. As will be related in the following paragraphs, this bone was demonstrated to be of Recent Indian origin and provided a portion of the Beaches faunal sample forming the basis of this thesis. A 50cm x 60cm test pit (N33.58 W24.42) placed in the midden feature produced a charcoal sample radiocarbon dated to 585 +/-80 BP/A.D. 1285-1445 (Beta-34272). Given the radiocarbon date and the fact that this test pit contained two triangular bifaces attributed to the Little Passage complex, it was concluded that the tested portion of the midden represented a Little Passage deposit. The faunal remains from this unit were analyzed for the purpose of this thesis.

Keeping in mind the basic theme of the Burnside Heritage Project the midden feature became an important focal point for the 1990 field season. The 1990 field work defined the midden as a roughly elliptical feature about six metres long and two metres wide (MacLean 1991:10). A 1m x 2m trench (Test Trench 1:N32.00W25.00) was placed across the north end of the midden immediately

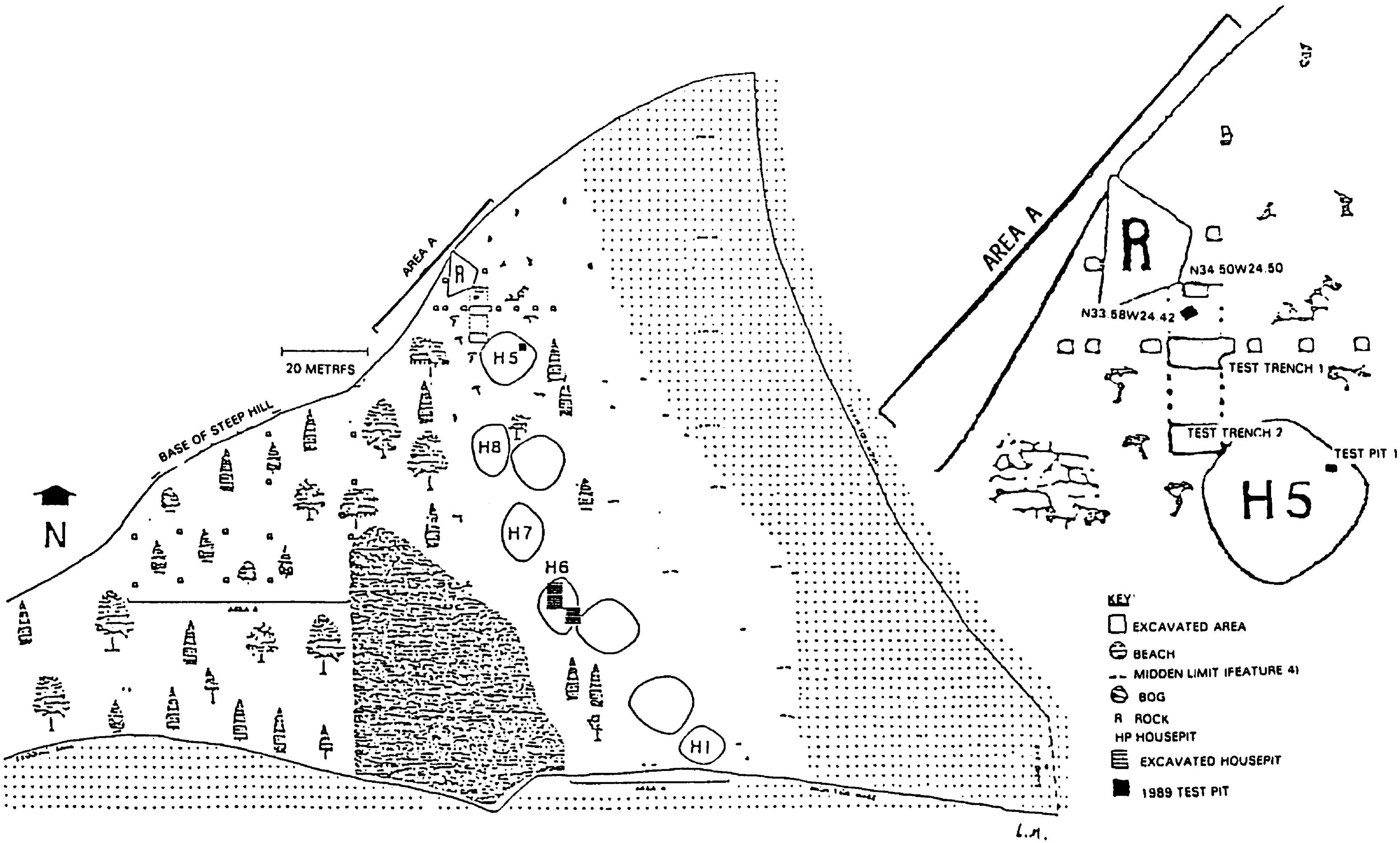



**Figure 4.5. Site map for the Beaches Site (DeAk-1) (derived from MacLean 1991b).**

south of the test pit dug in 1989 (N33.58W24.42). A second trench (Test Trench 2:N29.00W25.00) was placed across the southern end of the midden. A smaller 1.00 x 0.50m unit (N34.50 W24.50) was dug just to the north of the 1989 test pit. Bone recovered from this unit was also analyzed for the purpose of this thesis. Including the 1989 test pit, and twelve 0.50 x 0.50m test pits used to define the midden, just over five square metres, or about half of the midden was excavated. The midden feature was evaluated and it was concluded that it represented an intact feature. It was believed that the "linear orientation" of the midden occurred as a result of waste material being disposed of in a "shallow trench " lying "between two low ridges running along the beach (MacLean 1991b)." While the midden did not exhibit any stratigraphy MacLean (1991a;1991b) did identify three horizontally discrete cultural units in midden Feature 4. Table 4.1 summarizes the radiocarbon dates and/or diagnostic artifacts which were used to define these cultural units.

The units N33.58W24.42 and N34.50W24.50 provided about 96% of the Beaches faunal assemblage analyzed for this thesis. The final 4% came from a 0.50 x 0.50m test pit excavated in the wall fill of Beothuk house pit 5. This unit contained a diagnostic Little Passage corner-notched projectile point. It was believed that the unit represented a Little Passage midden which had been dug up during the creation of Beothuk house pit 5 and used as wall fill for that house pit.

This Little Passage midden was believed to have originally been located in what became the interior of house pit 5.

**Table 4.2. Summary of cultural data per excavated unit, obtained from midden Feature 4, Beaches Site (DeAk-1) 1989 and 1990 field seasons.**

| Unit | Radiocarbon Date or Diagnostic Artifact | Cultural Affiliation |
|---|---|---|
| N32.00<br>W25.00<br>(Test Trench 1) | 760 +/- 110 B.P.<br>(Beta-39285) | Beaches Complex |
| N33.58<br>W24.42 | 585 +/- 80 B.P.<br>(Beta-34272)<br>triangular bifaces | Little Passage Complex |
| N34.50<br>W24.50 | corner-notched<br>projectile point | Little Passage Complex |
| N29.00<br>W25.00<br>(Test Trench 2) | 460 +/- 80 B.P.<br>(Beta-39285)<br>Little Passage &<br>historic artifacts | late Little Passage/<br>early Beothuk Mixed |

Over the two field seasons, approximately 1400 bone fragments were recovered from the midden in addition to a small quantity of shell. The faunal material from units N33.58 W24.42, N34.50 W24.50 and Test Pit 11 were included in the thesis research. The author of this thesis was contracted to analyze all the faunal material from this midden Feature 4. Of particular concern to the project was the identification of animal species present, the reconstruction of possible seasons of human occupation of the site, and the recovery of data pertaining to the type of activities that contributed to the formation of the midden (MacLean 1991:8).

Also during the 1990 field season MacLean (1991a;1991b) excavated two diagonal quadrants of Beothuk house pit 6 and surveyed three additional regions of the site. In addition to the midden and house pit area (labelled Area A) the survey defined four other areas containing cultural material (see Figure 4.5). Area B produced Paleo-Eskimo and Beaches Recent Indian artifacts (MacLean 1991a:22). Area C produced Maritime Archaic Indian, Paleo-Eskimo, and Beaches Recent Indian artifacts (MacLean 1991a:25). Area D produced a small number of flakes but no culturally diagnostic lithics (MacLean 1991a:27). Area E, believed to be the northeastern limit of the site's occupation area did not produce any particularly diagnostic material. MacLean interpreted the presence of two retouched macroblades as possible Maritime Archaic artifacts (MacLean 1991a:28-29).

To summarise, the Beaches site produced a sample of 986 faunal elements from Little Passage context which provided the basis for the original research portion of this thesis. About 96% of the material came from the midden feature (N33.58W24.42 and N34.50W24.00) while the remaining 4% came from the wall fill of House Pit 5 (Test Pit 11).

### 4.2.3 Examination of the Little Passage Lithic Assemblage from the Beaches Site

The Beaches site produced two Little Passage midden features but no evidence of living areas or other activity related features. The site's Little Passage lithic assemblage came from either the middens or was mixed with the Beothuk component of the midden. Table 2 provides a summary of the Little Passage lithic assemblage collected at the Beaches site. The small assemblage suggests that tools were being manufactured at the site and possibly some hide preparation. By really stretching this information, it is suggested that tool manufacturing activities would be associated with long stays at the site where preparations, including tool manufacture and maintenance, would be made for the next foray. Ideally, a lithic assemblage used to identify the activities that occurred at the site would come from activity areas as opposed to refuse areas. It is not certain how representative the current Little Passage lithic assemblage is of what the Little Passage inhabitants were using the site for.

**Table 4.3 Summary of Little Passage Lithic Assemblage from the Beaches Site (from MacLean 1989, 1991a).**

| Form | Number of Specimens | | |
|---|---|---|---|
| | Test Pit 11 | N33.58 W24.42 | N34.50 W24.50 |
| **Tools** | | | |
| Projectile Point | 1 | | 1 |
| Triangular Biface | 1 | 2 | |
| Endscraper | 1 | | |
| Flake Scraper | 6 | 3 | |
| Blade-Like Flake | | | 1 |
| Retouched Flake | 6 | 8 | 1 |
| | | | |
| **Total Number of Tool Fragments** | 15 | 13 | 3 |
| | | | |
| **Evidence of Tool Manufacture and/or Maintenance** | | | |
| Thinning Flake | 13 | 32 | |
| Core | 2 | 3 | |
| (Ramah Flake) | | 1 | |
| | | | |
| **Total Manufacture/Maintenance** | 15 | 36 | |

### 4.2.4 Possible Site Function in Light of the Non-Faunal Data

The archaeological record makes it clear that the Beaches site has been considered an attractive spot for people to stop since the time of the Maritime Archaic Indians. One can see the attractions of the physical setting of this site. The site offers a sheltered position, nestled at the base of a steep, heavily treed slope and is buffered from the open ocean by intervening islands. And the site offers immediate access to transportation by water, in the form of a gently sloping beach.

The Beaches site lies in the centre of Bonavista Bay, in the inner coastal zone. However, the shallowness of Bonavista Bay at this central point would allow inhabitants of the Beaches site a fairly convenient position to island hop easterly in order to determine the conditions on the open ocean and the availability of such marine resources as the harp seal. In the immediate vicinity of the site there would always be shellfish and marine fish species available. Harbour seal would be attracted to the protected waters in the area. Although not available in concentration, individual caribou were known in recent times, to visit the Bonavista Bay coast in close proximity to the Beaches site (MacLean, personal communication).

The discovery of the extensive rhyolite quarry site within sight of the Beaches (MacLean 1991a;1991b), provides an additional attraction. MacLean does note that there is no evidence that the people of the Little Passage complex used this material. We know they had a preference for finer grained chert. However, the quarry site certainly was visited repeatedly by earlier peoples.

The site's central location places it virtually in the middle between two access points to the Newfoundland interior; the outlets to Gambo Pond and the Terra Nova River. As Schwarz has pointed out (1987:1), the resource potential of these two water systems would have been quite attractive. Both systems have populations of trout and salmon and possess known caribou crossings. Schwarz (1989:4) reported that, on Gambo Pond in particular, current residents report runs of salmon, trout, sea trout, eels and smelt. Today people in the area go ice-fishing for smelt.

A survey and subsequent excavations on Gambo Pond have produced evidence of Little Passage usage of this body of water (Schwarz 1989). Midden and hearth features but no structural features, have been found in association with Little Passage occupations. Schwarz (1989:15) observed that the sites were placed on points of land which would be "ideal locations for intercepting caribou," while two of these sites were also placed in "good summer fishing locations, near the mouths of major streams." The Recent Indian lithic assemblages collected from Gambo Pond exhibit a high scraper to projectile point ratio implying that these sites were associated with caribou hunting. The scrapers were interpreted to represent hide processing activities associated with the hunt (Schwarz 1989:15).

The water remains open all winter at the mouth of the Terra Nova River and some portions of Alexander Bay. This open water is known to attract overwintering waterfowl (Burrows 1989:84) and probably resident harbour seal. So far, archaeological investigations of the Terra Nova drainage system, in particular, Terra Nova Lake, have only produced a single retouched flake, as evidence of prehistoric occupation (Schwarz 1987). However, as Schwarz points out, these results are probably not representative of the prehistoric use of this lake since so much of the shore has either been disturbed by modern building activity or by ongoing erosion.

Based on site location and knowledge of modern resource distributions, it could be argued that the Beaches falls into either of two of Schwarz's site designations: the coastal base camp or the central exploitation camp. The hypothesized base camp is supposed to be located in the inner coastal zone near or on prime access routes to the interior. This location was hypothesized to have been chosen for the availability of a wide variety of resources in the *immediate* area for the use of individuals left at the camp while others were at special procurement sites. While the Beaches site does fulfil these criteria, it could also be argued that from this site, the inhabitants could monitor both the caribou and harp seal populations. It would be a relatively short trip to the shores of the outer islands which protect the Beaches site from the open ocean. It is possible that the site fulfilled the combined functions of both hypothesized site forms.

While it is not expected to be representative of the site, the limited Beaches lithic assemblage more closely resembles the proposed lithic assemblage for a base camp than a central exploitation camp. Schwarz predicts that a base camp lithic pattern would exhibit a high proportion of projectile points accompanied by a relatively high frequency of most other artifact classes which would be expected at a site hosting a variety of activities. The Beaches' limited Little Passage lithic assemblage has a low frequency of projectile points (2). However, there is evidence to support tool manufacture and hide preparation. So, it could be argued that a variety of activities are represented at the site, given the lithic assemblage currently available, but all lithic forms are represented in very low frequencies. The central exploitation camp model predicts a relatively high proportion of bifaces associated with a low frequency of projectile points and low frequency or non-existence of scrapers, linear, retouched and utilized flakes and/or evidence of tool manufacture. The Beaches assemblage does not support a central exploitation camp interpretation. While the low frequency of projectile points falls into this projected pattern, the presence of thinning flakes and cores, as well as lithics which could fulfil scraper functions are definitely significant given the current Beaches assemblage.

If the Beaches were a Little Passage coastal base camp then it could be that the Gambo pond sites would fulfil a special exploitation camp function, possibly focusing on caribou and other terrestrial mammalian species as well as some freshwater fish resources. Also, if the Beaches filled a coastal base camp role, then perhaps there are outer coastal special exploitation sites to be found in the Bonavista Bay area or it is possible that the Beaches site filled that role itself, playing a combined function within the Little Passage seasonal round.

Again based on geography and modern resource distribution, the combined roles of Schwarz's coastal base camp and central exploitation camp begins to look a lot like Rowley-Conwy's "idealized winter base camp." Although the site does not fit Rowley-Conwy's prediction that such a site would be found "a little way inland" it does fit his requirement that the camp offer "easy access by canoe or ice travel both to the interior and to the coast." The site's location also fulfils his prediction that it be located so that both caribou and (harp) seal availability could be monitored from the one base, that caribou meat from fall hunting camps, seals from winter hunts and stores from the previous summer could all be transported to the site with a minimum of effort, and that it provide a shelter.

Shellfish, harbour seal and overwintering waterfowl available in the immediate area of the Beaches site would provide the coastal resources Rowley-Conwy predicted would be needed during the winter months. These coastal resources were needed to even out food, clothing and shelter supplies that were otherwise vulnerable to the virtually all or nothing resources of the migratory harp seal and caribou populations. These coastal resources would supplement, or in years when one or the other of the migratory resources may have failed, replace, the stored caribou and/or seal supplies. For further supplementation, the Beaches mainland location would have allowed access to such non-migratory terrestrial mammals as bear and beaver available in the near coastal area.

In terms of archaeological remains, it would be expected that the Beaches site would produce evidence of repeated and extended occupations of the site. Evidence of substantial structures representing winter shelter would also be expected as would features such as pits that could be interpreted as storage areas. Post moulds representing the drying racks used in the preparation of preserved animal products would also help to support the winter base camp hypothesis for this site. Such post moulds might be accompanied by long hearths. Unfortunately, the Little Passage component of the site has only produced midden features.

#### 4.2.5 Expectations for the Faunal Data from the Beaches

If the Beaches site fulfilled the function of a coastal base camp it would be expected that the site's faunal assemblage would exhibit a wide variety of species from a wide variety of habitats. It would be expected that the identified species would represent the interior habitat of Newfoundland, the inner coastal zone where the site was located, and the outer coastal zone. One might expect to see patterns within the distribution of body parts to suggest that some species were being subject to initial butchering near where they were killed and then the remaining body portions were being brought back to the Beaches site. If the site fulfilled the function of the winter base camp, one would expect to see the above mentioned patterns as well as evidence of faunal exploitation for basically every month of the year.

In Chapters 8 and 9 the Beaches faunal assemblage will be presented and analyzed. In Chapter 10 these results will be evaluated to see how the faunal evidence supports or refutes the Little Passage usage of the Beaches site as a coastal base camp or perhaps as a combined coastal base camp/central exploitation camp as suggested by the non-faunal site data and current Little Passage settlement and subsistence theory.

# CHAPTER 5

## Methods of Analysis

This chapter describes how the Inspector Island and Beaches faunal assemblages were identified and the methods that were used to quantify these samples. This chapter also describes the approach taken to analysing body region patterning.

### 5.1 Identification Methods

The initial stage of analysis was the sorting of identifiable from unidentifiable faunal fragments. The term "faunal" was used to refer to any material of animal origin, which in the case of these two assemblages, only included bone and shell. During this sorting process all elements were examined for diagnostic characteristics such as articular surfaces, foramena, grooves, crests and/or shape. All fragments (identifiable and unidentifiable) were counted.

Unidentifiable fragments were sorted by taxonomic class and examined for signs of alteration such as heat, cutting or gnawing. The remaining faunal material was identified to skeletal element and to as specific a taxonomic level as possible, preferably to species. Only those fragments identified to at least taxonomic family were included in the calculations involving identified elements. Occasionally the reference "cf." was used to denote that the analyst was about 95% certain that the identification was correct.

Identifications were made based on comparison with the extensive reference collection at the Zooarchaeological Identification Centre (now called the Zooarchaeological Analysis Project or Z.A.P.) in Ottawa. Funds for travel to Ottawa were obtained from the Institute for Social and Economic Research (ISER), Memorial University of Newfoundland.

No attempt was made to identify the mammalian specimens to their Newfoundland subspecies levels. The reference material available at the Zooarchaeological Identification Centre did not include Newfoundland subspecies. It is believed that this did not affect the type of ecological and cultural inferences to be drawn in this thesis.

Whenever possible identified elements were assigned to a skeletal age category using the following system:

> Juvenile (J) elements were recognized by the presence of juvenile cortex over most of the bone surface and, when applicable, completely unfused epiphyses.
>
> Immature (I) elements exhibited no juvenile cortex or only where epiphyses were fusing. Epiphyseal fusion could vary from completely fused early fusing epiphyses with visible epiphyseal lines, to completely unfused late fusing epiphyses.
>
> Immature+ (I+) elements were those elements which were of adult size and free of juvenile cortex but missing those parts of the bone required to confirm full skeletal maturity, such as a completely fused late fusing epiphysis.

> Subadult (S) elements were free of juvenile cortex, those elements with early fusing epiphyses were completely fused and did not exhibit epiphyseal lines, and the late fusing epiphyses were at least partially fused or just exhibiting epiphyseal lines.
>
> Adult (A) elements exhibited complete epiphyseal fusion, although faint epiphyseal lines may have been visible at late fusing epiphyses.
>
> (derived from Cooper, 1980).

Although attempted, it was not possible to identify the sex of any of the fragments. Every element was examined for any sign of alteration such as heat exposure, carnivore gnawing or cutting.

Finally, all the identified material was described and catalogued using record forms derived from those used at the facilities of the Zooarchaeological Analysis Program. All this information was entered onto a computer data base (PFS: First Choice) which made sorting and counting an easier task. The entire catalogue of identified specimens is provided in Appendices A and B.

## 5.2 Quantification Methods

Three methods of quantification were used to describe the identified faunal assemblages, Number of Identified Specimens (NISP), Minimum Number of Individuals (MNI), and Relative Frequency (RF). On their own each of these methods was able to illustrate different aspects of, or patterns within, the faunal samples. However, each of these methods possessed inherent biases which could obscure patterns present in the faunal samples. Comparison of values calculated using these different methods helped to distinguish patterns resulting from the biases inherent in these methods from real trends present in the assemblages. At all times, the problems associated with these various methods were kept in mind.

### 5.2.1 Number of Identified Specimens (NISP)

The Number of Identified Specimens (NISP) is simply a total count of fragments identifiable to a particular species (Klein and Cruz-Uribe 1984:25). Although direct and easy to apply, this method does not take into account several important factors: some species simply have more skeletal elements than others, have the natural tendency to break up into more (identifiable or unidentifiable) fragments than others, or are subject to more or less fragmentation due to human activities. In addition, sometimes individuals or species are not represented as whole skeletons on the site to begin with because they have been processed elsewhere. In this case NISP values would underestimate the importance of species processed elsewhere to the economy of the site's inhabitants. To summarise, NISP is very susceptible to over- or under-representing species.

As Chaplin (1972:64) points out, there are various ways to count NISPs in an attempt to control for the above mentioned problems. Some analysts do not count separate fragments in cross-mended elements, others count articular ends and ignore midshaft fragments, and some count fragments in terms of fractions of whole elements adding the fractions up into whole element counts.

When NISP was applied to the Inspector Island and Beaches assemblages every identifiable fragment was counted separately. Incidents of cross-mending were rare and accounted for in the application of MNI analysis. It was believed that those individuals over-represented by a high degree of fragmentation were also accounted for during the application of MNI analysis.

### 5.2.2 Minimum Number of Individuals (MNI)

Minimum Number of Individual (MNI) values were calculated for each species (and some less specific taxonomic categories) by counting the one most numerous element per species occurring in the sample (Chaplin 1971:69; Klein and Cruz-Uribe 1984:26). For example, if the most commonly occurring harp seal element was the right humerus, then the MNI value equalled the number of right humeri. However, the skeletal age, sex and size of the most numerous element was also taken into account. For example, if there were three adult harp seal right humeri and one juvenile left humeri then the MNI value for harp seal was four. If there was striking difference in size between all the right humeri and the left humerus of equal skeletal age the MNI value was also four.

In general, this method is almost always an underestimation of the actual number of individuals per species present in the assemblage. As is the case for NISP values, MNI analysis is affected by differential preservation amongst species due to natural and human agencies which may limit survival of identifiable elements and hence relative proportions amongst species present at the site. The major drawback with this method of quantification is that species represented by a single or few elements are highly over-represented by MNI values.

MNI analysis did correct for some problems inherent in the NISP method. Although unequal preservation of different species could not be completely accounted for, the MNI analysis did remove bias due to differences in number of elements per skeleton between species, and, to some extent may have reduced bias for larger animals that would simply have been due to the fact that larger elements (under certain site conditions) had a greater chance of producing more identifiable fragments than small elements from smaller species.

### 5.2.3 Relative Frequency (RF)

Relative Frequency is an abstract value for comparing the relative proportion of species within and between samples. This measure was designed to correct for differences in the number of skeletal elements present per species and over- and under-representation by different elements (Hesse and Perkins 1974:151).

The calculation was a four step process. For each species, the total number of each whole element type present in the assemblage was calculated. Elements which varied in number per skeleton between individuals of the same species were not included. For example, thoracic vertebra and ribs can vary in number between individuals of the same seal species. Also, elements which had a tendency to be highly fragmented were not included, as for example, fragile skull vault and rib elements. For each species each element type was then divided by the number of times it occurred in the skeleton. The resulting values were then considered to be "corrected" for variation between species in number of times a particular element type occurred in the skeleton. These values were then listed according to frequency. Correction for over- and under-representation of particular elements was conducted arbitrarily by eliminating those elements which did not occur in the centre half of this ordered list (Singer cited in Hesse and Perkins 1974:151). The RF value for each species was the calculated mean of the remaining values.

One drawback to the application of RF analysis was the determination of number of "whole" elements. In almost every case this number had to be inferred by considering fragments as fractions of the whole element, taking into account side and obvious differences in skeletal age of the fragments and arriving at a sum. This process was rather subjective and the resultant RF values are probably not very comparable to those calculated by other analysts.

Application of the RF method to the Inspector Island and Beaches site assemblages ended up being merely an exercise. The identified samples were actually too small to produce meaningful values. Many species were represented by so few element types that there was no room for the step of correcting for over- and under-representation.

## 5.3 Analysis of Body Region Patterning

Identified elements were sorted according to five major body regions: head (H), trunk (TK), pectoral limb (PTLB), pelvic limb (PVLG), and total extremities (EX-T). These categories were defined as follows:

The head included all fragments identified as skull, mandible or teeth elements.

The trunk included all elements which fell along the midline (no limb elements) of the body below the head and superior to the hind limbs. Vertebrae, ribs and sternebrae fell into this category.

The pectoral limb was comprised of three components: the pectoral girdle (scapula and clavicle), the major long bones (humerus, radius and ulna) and extremities (carpals, metacarpals and phalanges).

The pelvic limb was also comprised of three components: the pelvic girdle (innominate), the major long bones (femur, tibia and fibula) and extremities (tarsals, metatarsals and phalanges).

The extremities category included all carpals/tarsals, metapodials and phalanges which could not be identified specifically enough to be assigned to a particular limb.

## 5.4 Summary of Methods of Analysis Applied to the Inspector Island and Beaches Faunal Assemblages

The Inspector Island and Beaches faunal assemblages were identified to at least taxonomic family through comparison with the skeletal reference collection at the Zooarchaeological Analysis Program in Ottawa. The identified samples were quantified using Number of Identified Specimens (NISP), Minimum Number of Individuals (MNI) and Relative Frequency (RF) calculations.

All three methods of quantification were also expressed in percentages in order to make the values comparable between different sample sizes. Percentage values helped to highlight the relative proportions of species frequencies and various traits obscured by differences in actual sample size.

The sample sizes were too small to apply statistical methods in order to determine whether or not any of the perceived patterns amongst the assemblages were random or not.

The results of the analysis of the Inspector Island and Beaches faunal assemblages are described in the following four chapters.

# CHAPTER 6

## Inspector Island

## Results of Analysis: Identification and Quantification

The following is a summary of the first level of analysis of the faunal assemblage from the Inspector Island site. This first level of analysis includes the identification and quantification of the faunal material. Further analysis of the raw data in terms of distribution of skeletal elements per body regions per species, the habitats represented and the season of availability of the identified species will continue in the following chapter.

### 6.1 Inspector Island (DiAq-2)

The sources of the Inspector Island faunal material have been described in Chapter 4. The material is considered as eight analytical units based on their provenience (see Table 6.1). However, the units receiving major consideration are S6E0/S6E1/S7E1 Level 3 and S6E1/S6E0/S7E1/S7E0 Level 5 which produced over 94% of the *identified* material. For the purpose of this discussion these units will be referred to as S6E0/L3 and S6E1/L5. As described in Chapter 4, S6E0/L3 and S6E1/L5 were separated vertically by a sterile, windblown sand layer and so were considered to represent at least two separate periods of activity and that is why they are considered as independent analytical units. Table 6.1 summarises the contribution of S6E0/L3, S6E1/L5 and each of the remaining six analytical units to the total collection of faunal material gathered from Inspector Island.

**Table 6.1. Distribution per analytical unit, of the total Inspector Island faunal sample.**

| Unit | # of Unident. Fragments | % of Total Fragments per Unit | # of Ident. Fragments (NISP) | % of Total Fragments per Unit | Total # of Fragments per Unit |
|---|---|---|---|---|---|
| S6E0/L3 | 1,907 | 78.67 | 517 | 21.33 | 2424 |
| S6E1/L5 | 308 | 55.90 | 243 | 44.10 | 551 |
| N3E3/N3E4/N4E2 L5 | 25 | 53.19 | 22 | 46.81 | 47 |
| S1E6 L5 | 27 | 64.29 | 15 | 35.71 | 42 |
| S1E5 L3 | 0 | 0.00 | 7 | 100.00 | 7 |
| N3E7 L5 | 17 | 89.47 | 2 | 10.53 | 19 |
| S3W2 L5 | 16 | 94.12 | 1 | 5.88 | 17 |
| N2E6 | 8 | 100.00 | 0 | 0.00 | 8 |
| Combined Site Total | 2,308 | 74.09 | 807 | 25.91 | 3,115 |

Table 6.2 summarises the contribution (number of fragments) of the various taxonomic classes to the total faunal sample. Shell material representing the Class Pelecypoda was recovered but not quantified in a manner comparable to the other classes. In some units, shell was the only type of faunal material present.

As summarised in Table 6.2, the most abundantly represented class in the site assemblage, bony fish, comprised 45.23% of the total site sample. Class Unknown and mammal fragments made up almost equal proportions of the total site sample, representing 28.70% and 24.82% respectively. Bird remains comprised the last 1.25% of the total site assemblage.

As was mentioned in Chapter 4, it is believed that the screening of the unit S6E0/L3 was a major factor in the recovery of the high proportion of Class Unknown fragments. The screening process recovered some bone fragments that were too small to distinguish their class of origin based on bone texture, density and cortex thickness; these fragments were either from birds or mammals. Screening was probably also a major factor in the proportionately high recovery rate of tiny fish fragments; fish remains from S6E0/L3 contributed 35.67% of the total site sample. As well, because S6E0/L3 was screened, the low frequency of bird remains was not simply an artifact of the excavation methods but, for this unit at least, was probably a real phenomenon.

**Table 6.2. Total Inspector Island faunal assemblage representation by taxonomic class, expressed as number of fragments per unit and percentage of all fragments recovered per unit.**

| Unit | Mammal | | Bird | | Fish | | Unknown | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # of Frag's | % of Frag's. | # of Frag's | % of Frag's | # of Frag's | % of Frag's | # of Frag's | % of Frag's | # of Frag's |
| S6E0/L3 | 400 | 16.50 | 20 | 0.83 | 1,111 | 45.83 | 893 | 36.84 | 2,424 |
| S6E1/L5 | 236 | 42.83 | 18 | 3.27 | 297 | 53.90 | | | 551 |
| N3E3/L5 | 45 | 95.74 | 1 | 2.13 | | | 1 | 2.13 | 47 |
| S1E6 L5 | 41 | 97.62 | | | 1 | 2.38 | | | 42 |
| N3E7 | 19 | 100.00 | | | | | | | 19 |
| S3W2 | 17 | 100.00 | | | | | | | 17 |
| N2E6 L5 | 8 | 100.00 | | | | 0.00 | | 0.00 | 8 |
| S1E5 L3 | 7 | 100.00 | | 0.00 | | 0.00 | | 0.00 | 7 |
| Combined Site Total | 773 | 24.82 | 39 | 1.25 | 1,409 | 45.23 | 894 | 28.70 | 3,115 |

## 6.2 Discussion of Species Identified in Inspector Island Faunal Sample

Tables 6.3 through 6.6 list all the species identified with certainty or with 95% confidence (cf.) in the Inspector Island faunal sample, in their taxonomic order and using their common and scientific names. Many identifications are to taxonomic levels greater than species. These larger taxonomic categories are defined in the following sections which are organized by Class; i.e. fish, mammal and bird.

### 6.2.2 Fish

Only three species of fish were positively identified. All species can be found in the vicinity of the site today. This sample represents a very small fraction of the species potentially available.

Osmeridae - Smelt Family

Rainbow smelt was the only member of the smelt Family represented in the site sample. Based on morphology the other smelt species, capelin, was eliminated with confidence from the list of identifications.

Gadidae - Cod Family

In general, the codfish family includes Arctic, Atlantic and Greenland cod, cusk and haddock. In this sample all cod elements were identified to at least the genus *Gadus* which is comprised of the two species Atlantic and Greenland cod. Those fragments labelled *Gadus* species were from elements indistinguishable between these two cod species. There is no reason to believe either one of the two cod species was any more likely to be in the sample than the other as only one fragment in the entire sample was positively identified as Atlantic cod and both species were present in equally great abundance in the area (Scott and Scott 1988).

Cottidae - Sculpin Family

Several levels of identification within this family were used in this analysis. Many specimens could not be more precisely identified than to the cf. *Myoxocephalus* category because two sculpin species (Hookear and Twohorn sculpins) outside this genus were missing from the reference collection and so could not be eliminated with confidence as potential identifications. There are four species within the genus *Myoxocephalus*; Longhorn, Shorthorn, Grubby and Arctic sculpins. Although many skeletal elements appear the same for all four of these species one shorthorn sculpin (*Myoxocephalus scorpius*) element was positively identified and several fragments could be narrowed down to either short- or longhorn sculpin. Shorthorn sculpin was the only species positively identified within the entire Cottidae family. Today, three of the four *Myoxocephalus* species, shorthorn, longhorn and grubby, are found in the waters around Inspector Island (Scott and Scott 1988).

**Table 6.3. Fish Species identified in Inspector Island faunal assemblage.**

| Scientific Name | Common Name |
|---|---|
| ORDER SALMONIFORMES | |
| Superfamily Osmeroidea | |
| Family Osmeridae | |
| SUBFAMILY OSMERINAE | |
| *Osmerus mordax* (Mitchill, 1814) | rainbow smelt |
| ORDER GADIFORMES | |
| Suborder Gadoidei | |
| Family Gadidae | |
| SUBFAMILY GADINAE | |
| *Gadus morhua* Linnaeus, 1758 | Atlantic cod |
| ORDER SCORPAENIFORMES | |
| Suborder Cottoidei | |
| Family Cottidae | |
| *Myoxocephalus scorpius* (Linnaeus, 1758) | shorthorn sculpin |

### 6.2.3 Mammals

Eight mammal species were identified in the Inspector Island sample, see Table 6.4 for summary. Identified species included beaver, red fox, black bear, pine marten, otter and caribou which make up six of the fourteen native terrestrial Newfoundland mammal species. Absent native terrestrial mammal species were the little brown and eastern long-eared bats, Arctic hare, meadow mouse, muskrat, wolf, ermine and lynx. The other two mammal species identified were the marine oriented harp and harbour seals. While all identified mammal species are present in Newfoundland today, the pine marten is considered an endangered species in Newfoundland. The following sections define the terms used for those faunal fragments that were identified to taxonomic categories greater than species.

Phocidae - Earless Seal Family

The Family Phocidae (F. Phocidae) includes all the earless seal species found on the Northwest Atlantic coast. These species are the bearded, grey, harbour, ringed, harp and hooded seals. Fragments which were labelled as Phocidae could not be more precisely identified because that particular element is morphologically indistinguishable between species or because the particular fragment was too juvenile in its level of development and so, again, morphologically indistinguishable between seal species.

*Phoca* sp.

*Phoca* species elements were those specimens which were morphologically distinct enough to limit their identification to the three species within the genus *Phoca*; harbour, harp and ringed seal. These specimens were definitely not from hooded, grey or bearded seals. It is considered likely that specimens identified as *Phoca* sp. were either harp or harbour seal elements because these were the only seal species positively identified in the assemblage and because the only other

*Phoca* species, ringed seal, is not presently known to frequent this part of the island.

**Table 6.4. Mammal Species Identified in Inspector Island faunal assemblage.**

| Scientific Name | Common Name |
|---|---|
| ORDER CARNIVORA | |
| Family Canidae | |
| *Vulpes vulpes* (Linnaeus, 1758) | red fox |
| Family Ursidae | |
| *Ursus americanus* Pallas, 1780 | American black bear |
| Family Mustelidae | |
| SUBFAMILY MUSTELINAE | |
| *Martes americana* (Turton, 1806) | pine marten |
| SUBFAMILY LUTRINAE | |
| *Lutra canadensis* (Schreber, 1776) | Canadian otter |
| Family Phocidae | |
| SUBFAMILY PHOCINAE | |
| *Phoca groenlandica* Erxleben, 1777 | harp seal |
| *Phoca vitulina* Linnaeus, 1758 | harbour seal |
| ORDER ARTIODACTYLA | |
| Family Cervidae | |
| *Rangifer tarandus* (Linnaeus, 1758) | caribou |
| ORDER RODENTIA | |
| Family Castoridae | |
| *Castor canadensis* Kuhl, 1820 | American beaver |

Cetacean

The single piece of marine mammal skull could only be identified to this general category which includes small whale, dolphin and porpoise species.

Black bear

Elements identified as black bear could be distinguished from those of polar bear due to morphology as well as size.

Cervidae - Deer Family

Those elements which were identified as Family Cervidae were almost certainly from caribou, this species being the only member of the family known to be native to the island. It was only their lack of completeness which prevented a more exact identification of these specimens. Moose, which is so common today, was only imported to the island as recently as the 1870s (Cameron 1958:102) and did not successfully populate the island until the early 1900s.

### 6.2.4 Birds

Only two bird species, red-breasted merganser and black guillemot, were positively identified. Two elements were identified as cf. Canada goose. All levels of identification for this class include species currently living in the area around Inspector Island. However, all of the birds identified represent only a small fraction of the potential variety of bird species presently available in the region.

Eider/Scoter

Most of the duck material was identified to the sea duck category of eider/scoter. In general, there are few skeletal elements which are morphologically distinct between these two genuses and none of these distinguishing elements were available in the site sample; however, some specimens could be narrowed down to common eider/white-winged scoter based on morphology. This identification was further supported by modern distribution information. King eider is presently considered to be a rare winter resident while the common eider is a common year round resident of the island. It is unfortunate that some king eider elements were missing from the reference collection and as a result this species could not be eliminated with complete confidence for some specimens. The three scoter species, black, surf and white-winged scoters, are all considered to be rare winter residents of the island (Montevecchi and Tuck 1987:228; Peters and Burleigh 1951). To summarise, those fragments identified as cf. eider/scoter are considered most likely to be common eider or possibly white-winged scoter.

**Table 6.5. Bird Species Identified in Inspector Island faunal assemblage.**

| Scientific Name | Common Name |
|---|---|
| ORDER ANSERIFORMES | |
| Family Anatidae | |
| SUBFAMILY ANSERINAE | |
| Tribe Anserini | |
| *Branta canadensis* (Linnaeus) | Canada goose* |
| SUBFAMILY ANATINAE | |
| Tribe Mergini | |
| *Mergus serrator* Linnaeus | red-breasted merganser |
| ORDER CHARADRIIFORMES | |
| Family Alcidae | |
| *Cephus grylle* (Linnaeus) | black guillemot |

* Canada goose material was identified with 95% certainty.

Alcidae

Specimens identified as Family Alcidae were either members of the genus *Alca* (murres), *Uria* (razorbill) or *Cephus* (guillemot): dovekie, great auk, murrelots and puffins were eliminated with confidence. Although those specimens identified as black guillemot could not be distinguished morphologically from the pigeon guillemot, modern distribution information indicates that the pigeon guillemot is only found on the west coast of Canada.

**Table 6.6. Shellfish species identified in Inspector Island faunal assemblage.**

| Scientific Name | Common Name |
|---|---|
| ORDER MYTILOIDA | |
| Family Mytilidae | |
| *Mytilus edulis* Linnaeus, 1758 | blue mussel |
| ORDER MYOIDA | |
| Family Myidae | |
| *Mya arenaria* Linnaeus, 1758 | soft-shell clam |

Soft-Shell Clam and Blue Mussel

Shell fragments of soft-shell clam (*Mya arenaria*) and blue mussel (*Mytilus edulis*) were associated with the bone deposits. Pockets of preserved bone on the site have been attributed to the buffering action of the accompanying mollusc shell. In general, soft-shell clams are found in bays and estuaries. They are found intertidally and subtidally and up to depths of 9 metres (Hawkins 1985:3). Soft-shell clams bury themselves up to 10 centimetres in the bottom sediments. This species is edible and can be harvested by being dug up while the tide is out. The blue mussel also occurs intertidally and in shallow waters. This species anchors itself to rocks (Gordon and Weeks 1982:40).

## 6.3 Quantification of the Inspector Island Identified Sample

Table 6.7 summarises the actual (NISP) and relative (%NISP) abundance of species per analytical unit for each of the seven units that produced identifiable material. Figures 6.1 and 6.2 provide a visual comparison of the raw Number of Identified Specimens (NISP) values for these units. Figures 6.3 and 6.4 illustrate the contribution each *component* unit made to the overall S6E0/S6E1/S7E1 Level 3 (S6E0/Level 3) and S6E1/S7E1/S7E0 Level 5 (S6E1/Level 5) analytical units. In particular, Figure 6.3 helps to show just how much more faunal material was collected from S6E0 Level 3 than from the other component units of this level, most likely because its matrix was screened. It should also be kept in mind that, as mentioned in Chapter 4, these component units were not equal, square 1m x 1m units because they had been eroded along an embankment in an irregular pattern.

Table 6.8 summarises, per analytical unit, the Minimum Number of Individuals (MNI) data and distribution of NISP with regard to osteological age. Table 6.9 summarises Relative Frequency (RF) calculations for the site. Figures 6.11 to 6.13 illustrate %RF values for S6E0/L3, S6E1/L5 and N3E3/L3, the three units contributing the largest proportion of the Inspector Island faunal material.

**Table 6.7. Frequency of species identified from Inspector Island calculated as NISP and %NISP.**

| Taxon | S6E0/L3 | | S6E1/L5 | |
|---|---|---|---|---|
| | NISP | %NISP | NISP | %NISP |
| black bear | 4 | 0.77 | 1 | 0.41 |
| pine marten | | | 1 | 0.41 |
| cetacean | | | 1 | 0.41 |
| Phocidae | 85 | 16.44 | 63 | 25.93 |
| cf. Phocidae | 3 | 0.58 | | |
| *Phoca* sp. | | | 3 | 1.24 |
| harbour seal | 10 | 1.93 | 29 | 11.93 |
| cf. harp seal | | | 1 | 0.41 |
| harp seal | 4 | 0.77 | 8 | 3.29 |
| caribou | 2 | 0.39 | 1 | 0.41 |
| | | | | |
| Alcidae cf. guillemot | | | 1 | 0.41 |
| black guillemot | 3 | 0.58 | 2 | 0.82 |
| goose, large | 1 | 0.19 | 1 | 0.41 |
| goose cf. Canada goose | 1 | 0.19 | 1 | 0.41 |
| duck | 1 | 0.19 | | |
| eider/scoter | | | 2 | 0.82 |
| red-breasted merganser | | | 1 | 0.41 |
| | | | | |
| rainbow smelt | 282 | 54.55 | 14 | 5.76 |
| cf. *Gadus* sp. | | | 6 | 2.47 |
| *Gadus* sp. | 1 | 0.19 | 1 | 0.41 |

Continued next page.

**Table 6.7 continued. Frequency of species identified from Inspector Island calculated as NISP and %NISP.**

| Taxon | S6E0/L3 | | S6E1/L5 | |
|---|---|---|---|---|
| | NISP | %NISP | NISP | %NISP |
| cf. Atlantic cod | | | 2 | 0.82 |
| Atlantic cod | | | 1 | 0.41 |
| Cottidae | 10 | 1.93 | 20 | 8.23 |
| cf. *Myox*. sp. | 80 | 15.47 | 15 | 6.17 |
| *Myox*. sp. | 7 | 1.35 | 21 | 8.64 |
| cf. short/longhorn | 6 | 1.16 | | |
| cf. shorthorn | 15 | 2.90 | 44 | 18.11 |
| short/longhorn | 1 | 0.19 | | |
| shorthorn sculpin | 1 | 0.19 | 3 | 1.24 |
| **Unit Totals** | 517 | 99.96 | 243 | 99.98 |

| Taxon | S1E5 L5 | | S1E6/L5 | |
|---|---|---|---|---|
| | NISP | %NISP | NISP | %NISP |
| beaver | 7 | 100.00 | | |
| red fox | | | 1 | 6.67 |
| Phocidae | | | 2 | 13.33 |
| harbour seal | | | 12 | 80.00 |
| **Unit Totals** | 7 | 100.00 | 15 | 100.00 |

**Table 6.7 continued. Frequency of species identified from Inspector Island calculated as NISP and %NISP.**

| Taxon | N3E3/L5 | | N3E7 L5 | |
|---|---|---|---|---|
| | NISP | %NISP | NISP | %NISP |
| river otter | 5 | 22.73 | | |
| Phocidae | 13 | 59.09 | | |
| harbour seal | | | 1 | 50.00 |
| Cervidae | 1 | 4.55 | 1 | 50.00 |
| caribou | 2 | 9.09 | | |
| | | | | |
| Alcidae cf. Alca/Uria | 1 | 4.55 | | |
| Unit Totals | 22 | 100.01 | 2 | 100.00 |

| Taxon | S3W2/L5 | |
|---|---|---|
| | NISP | %NISP |
| harbour seal | 1 | 100.00 |
| Unit Totals | 1 | 100.00 |

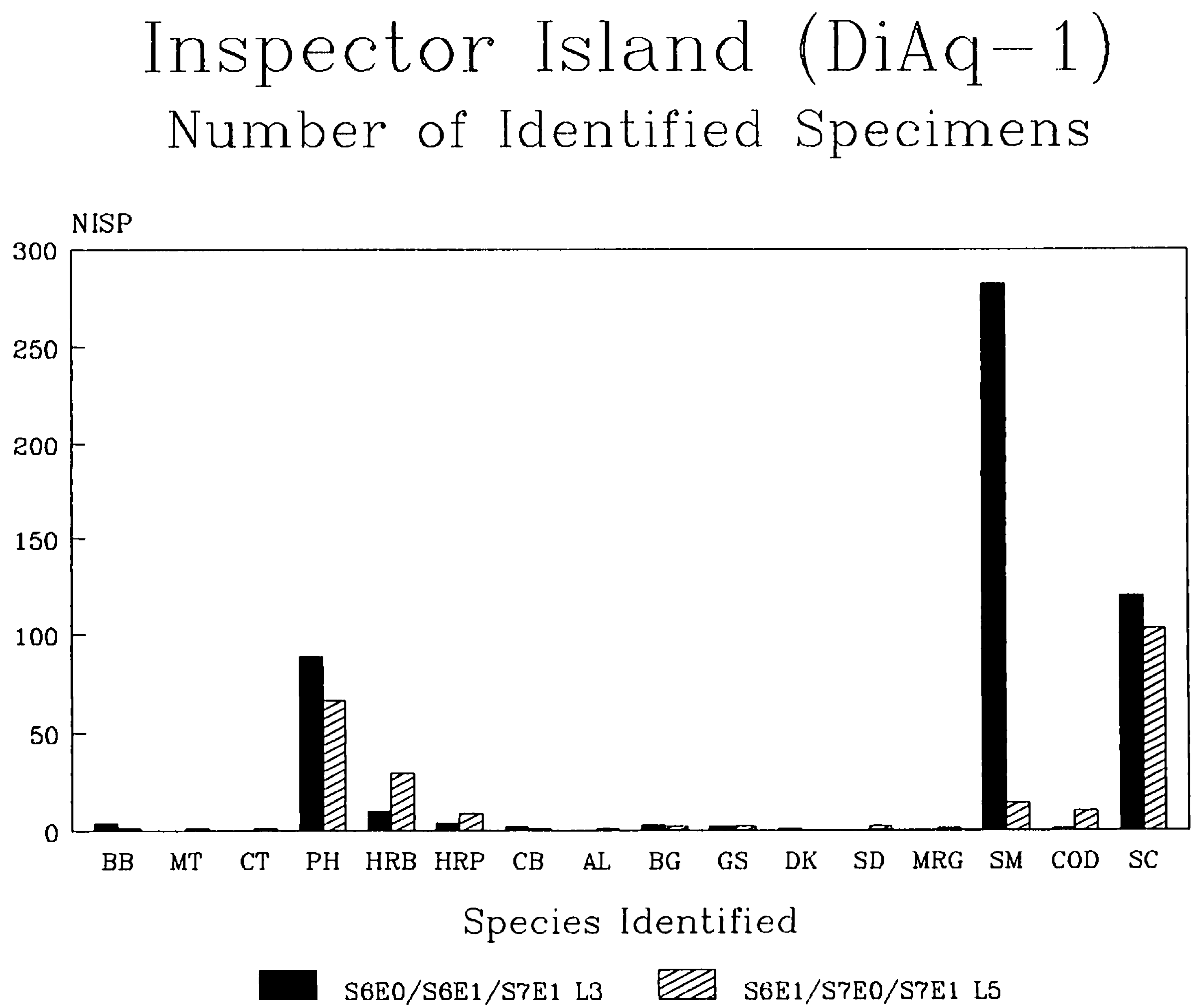



**Figure 6.1. Number of Identified Specimens (NISP) from Inspector Island units S6E0/L 3 and S6E1/L5. See page xvi for list of abbreviations used.**

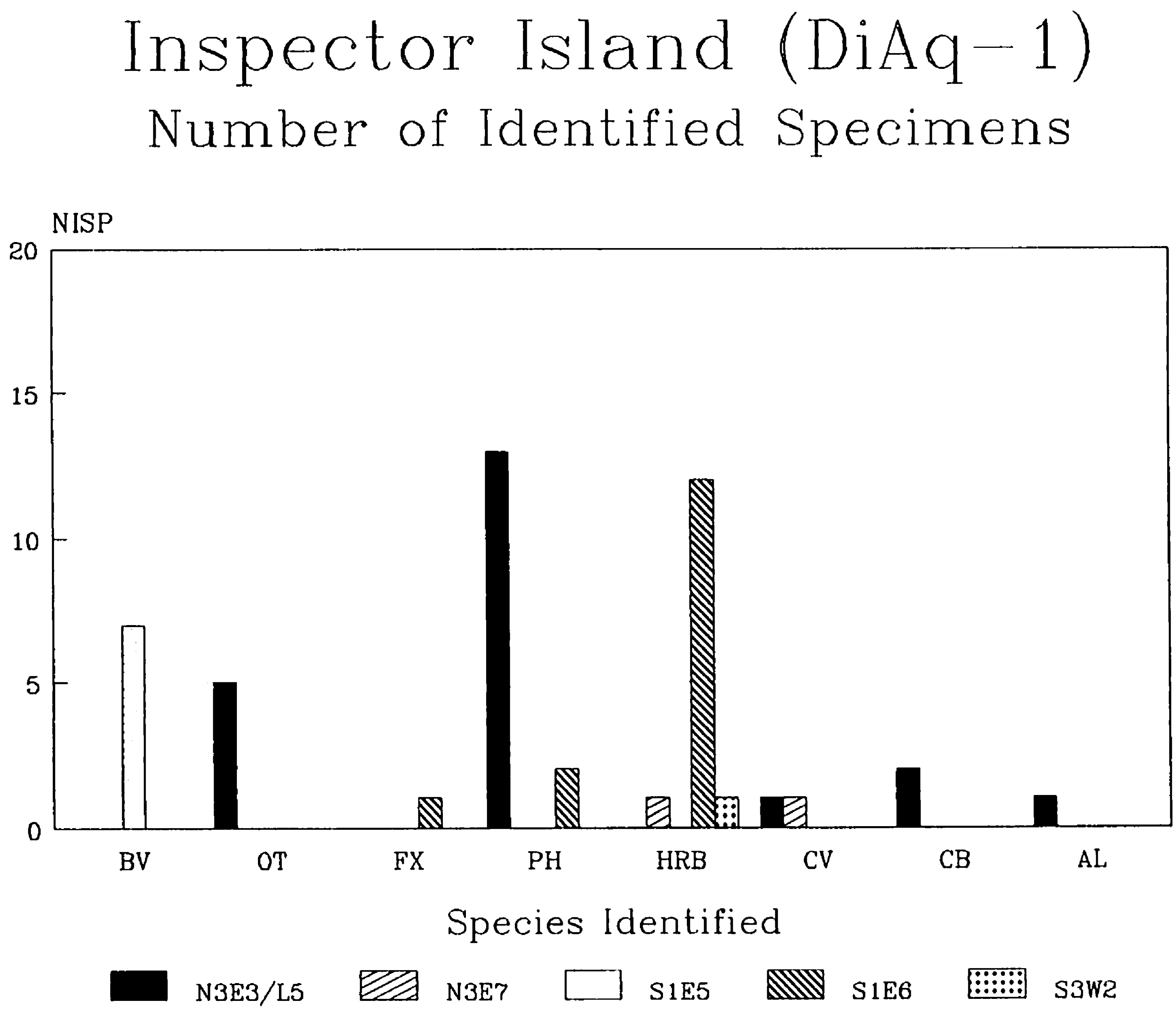



**Figure 6.2. Number of Identified Specimens (NISP) from Inspector Island units N3E3/L5, N3E7, S1E5, S1E6 and S3W2.**

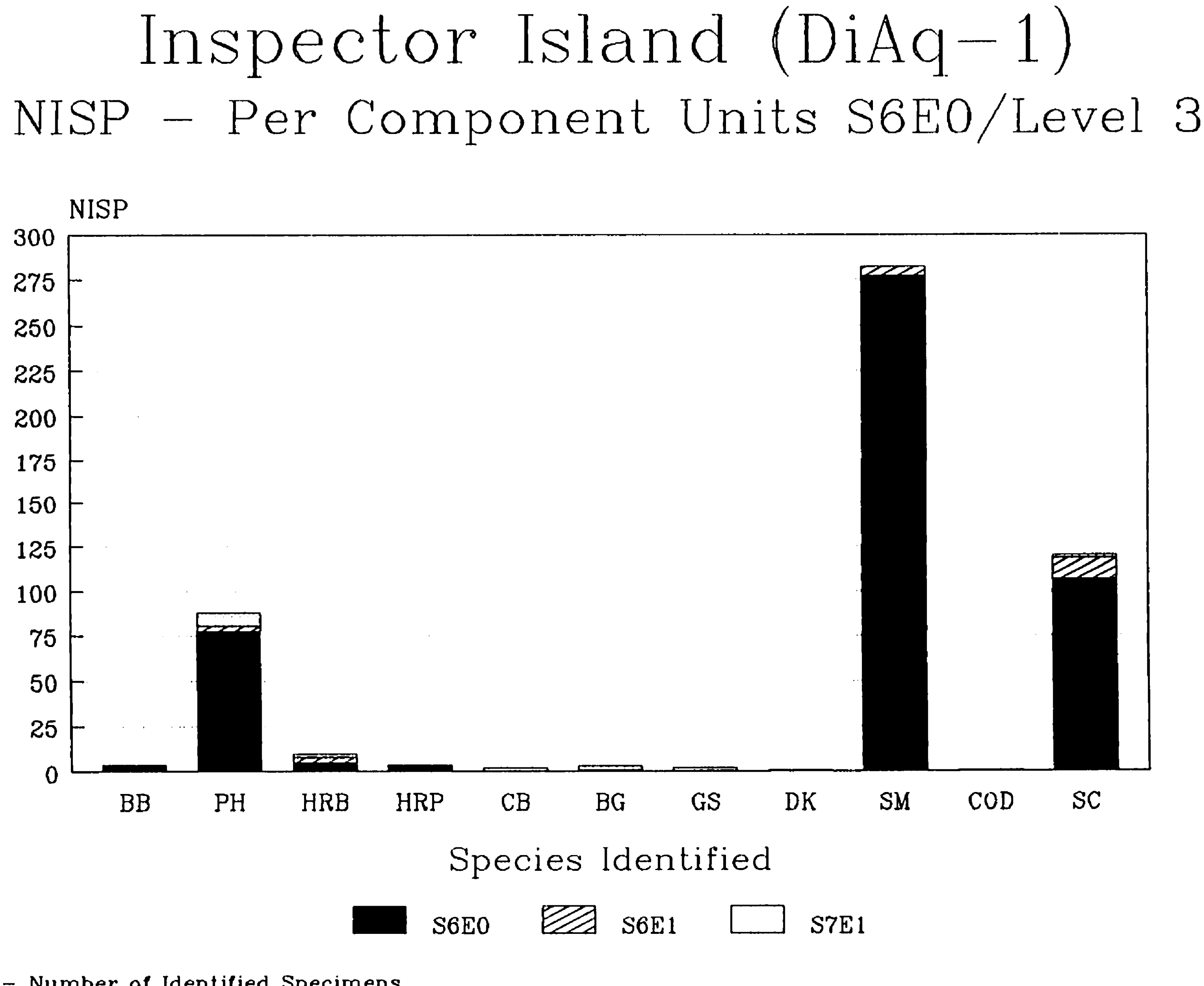



**Figure 6.3. Number of Identified Specimens (NISP) from S6E0/Level 3 illustrating the contribution of each component unit.**

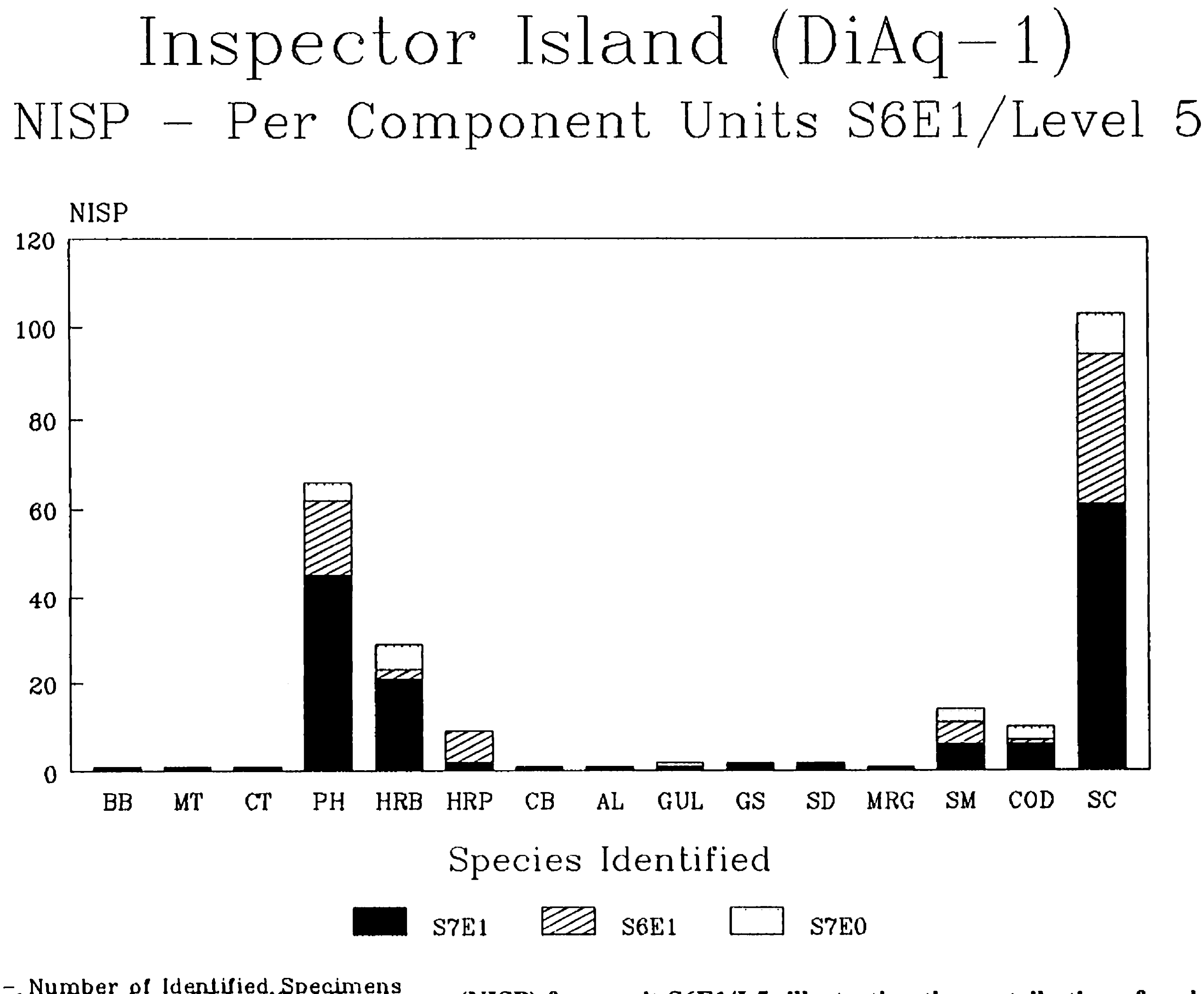



**Figure 6.4. Number of Identified Specimens (NISP) from unit S6E1/L5, illustrating the contribution of each component unit.**

**Table 6.8. Minimum Number of Individuals (MNI) and NISP distribution by skeletal age, for the Inspector Island assemblage.**

| S6E0/L3 | | | | |
|---|---|---|---|---|
| **Taxon** | **Age** | **NISP** | **MNI** | **Element** |
| Phocidae | J | 59 | 1 | humerus |
| | I | 8 | (1)* | ulna |
| | I+ | 2 | (1) | teeth |
| | /A | 16 | | |
| cf. Phocidae | J | 3 | | |
| harbour seal | I | 2 | 1 | teeth |
| | I+ | 8 | 2 | temporal |
| harp seal | I+ | 4 | 2 | temporal |
| black bear | I+ | 3 | 1 | |
| | /A | 1 | | |
| caribou | I+ | 2 | 1 | |
| black guillemot | I+ | 3 | 2 | humerus |
| goose, large | I+ | 1 | (1) | |
| goose, cf. Canada | I+ | 1 | 1 | |
| duck sp. | I+ | 1 | 1 | |
| rainbow smelt | I+ | 282 | 5 | 274 vertebral bodies |
| *Gadus* sp. | I+ | 1 | 1 | |
| Cottidae | I+ | 10 | (1) | |
| Cottidae cf. *Myoxocephalus* sp. | I+ | 80 | 3 | vomer, penultimate, vertebrae |
| *Myoxocephalus* sp. | I+ | 7 | (1) | |
| cf. longhorn/shorthorn sculpin | I+ | 6 | (1) | |

| S6E0/L3 | | | | |
|---|---|---|---|---|
| **Taxon** | **Age** | **NISP** | **MNI** | **Element** |
| cf. shorthorn | $I^+$ | 15 | (2) | maxilla |
| longhorn or shorthorn sculpin | $I^+$ | 1 | (1) | |
| shorthorn sculpin | $I^+$ | 1 | (1) | |

* Those MNI values enclosed in brackets indicate the number of individuals detected in that particular taxon and age category, but that the value is not to be included in total MNI analysis because it is believed these individuals are probably already counted within a more specific taxonomic level. This situation occurred because the same skeletal element was not available to use for MNI calculations in all age categories within the same taxon. For example, all seal temporal fragments were identified to species and were all of $I^+$ skeletal age, yet there is no doubt that juvenile seals are present in the sample but there are no temporal fragments available to make MNI estimations. Also, there were no temporal fragments identified to Family Phocidae that could be used to calculate MNI. The calculation is further complicated by the fact that different skeletal elements within a single individual, age at varying rates.

| S6E1/L5 | | | | |
|---|---|---|---|---|
| **Taxon** | **Age** | **NISP** | **MNI** | **Element** |
| Phocidae | J | 31 | 1(3) | humerus |
| | I | 20 | 4 | basisphenoid |
| | I+ | 10 | 1 | rib |
| | /A | 2 | | |
| *Phoca* sp. | J | 1 | (1) | astragalus |
| | I | 1 | | |
| | I+ | 1 | 1 | temporal |
| harbour seal | J | 2 | 2 | mandible |
| | I | 5 | | |
| | I+ | 22 | 3 | temporal |
| cf. harp seal | I+ | 1 | 1 | |
| harp seal | I+ | 8 | 2 | temporal |
| black bear | A | 1 | 1 | teeth |
| pine marten | I+/A? | 1 | 1 | tibia |
| cetacean | | 1 | 1 | |
| caribou | I+ | 1 | 1 | |
| | | | | |
| goose, large | I+ | 1 | (1) | |
| goose, cf. Canada | I+ | 1 | 1 | |
| cf. eider or scoter | I+ | 1 | 1 | |
| white-winged scoter/common eider | I+ | 1 | 1 | |
| red-breasted merganser | I+ | 1 | 1 | |
| cf. black guillemot | I+ | 1 | 1 | |
| black guillemot | I+ | 1 | 1 | |

| S6E1/L5 | | | | |
|---|---|---|---|---|
| **Taxon** | **Age** | **NISP** | **MNI** | **Element** |
| | | | | |
| rainbow smelt | I+ | 14 | 1 | |
| cf. *Gadus* sp. | I+ | 6 | (1) | |
| *Gadus* sp. | I+ | 1 | (1) | |
| cf. Atlantic cod | I+ | 2 | (1) | |
| Atlantic cod | I+ | 1 | 1 | |
| Cottidae | + | 20 | 1 | |
| cf. *Myoxocephalus* sp. sculpin | I+ | 15 | / | |
| *Myoxocephalus* sp. | I+ | 21 | / | |
| cf. shorthorn sculpin | I+ | 44 | 2 | dentary |
| shorthorn sculpin | I+ | 3 | / | |

| N3E3/L5 | | | | |
|---|---|---|---|---|
| **Taxon** | **Age** | **NISP** | **MNI** | **Element** |
| Phocidae | J | 2 | 1 | |
| | I | 4 | 1 | |
| | $I^{+}$ | 7 | 1 | |
| river otter | $I^{+}$ | 5 | 1 | |
| cf. caribou | $I^{+}$ | 2 | / | |
| caribou | $I^{+}$ | 1 | 1 | |
| cf. murre or auk | $I^{+}$ | 1 | 1 | |
| | | | | |
| **N3E7** | | | | |
| harbour seal | $I^{+}$ | 1 | 1 | |
| cf. caribou | $I^{+}$ | 1 | 1 | |
| | | | | |
| **S1E5 L3** | | | | |
| beaver | I | 3 | / | |
| | $I^{+}$ | 4 | 1 | |
| | | | | |
| **S1E6 L5** | | | | |
| Phocidae | J | 2 | 1 | |
| harbour seal | $I^{+}$ | 12 | 2 | |
| red fox | $I^{+}$ | 1 | 1 | |
| | | | | |
| **S3W2 L5** | | | | |
| harbour seal | $I^{+}$ | 1 | 1 | |

**Table 6.9. Relative Frequency (RF) and Percentage Relative Frequency calculated per unit and taxonomic taxon, for the Inspector Island assemblage.**

| Mammals | | | | | | |
|---|---|---|---|---|---|---|
| | S6E0/L3 | | S6E1/L5 | | N3E3/L3 | |
| **Taxon** | **RF** | **%RF** | **RF** | **%RF** | **RF** | **%RF** |
| bear | 0.50 | 14.29 | 0.50 | 14.98 | | |
| marten | | | 0.50 | 14.98 | | |
| otter | | | | | 0.50 | 59.74 |
| Phocidae | 0.50 | 14.29 | 0.59 | 17.62 | 0.30 | 35.24 |
| *Phoca* sp. | | | 0.50 | 14.98 | | |
| harbour seal | 0.50 | 14.29 | 0.50 | 14.98 | | |
| harp seal | 1.00 | 28.57 | 0.50 | 14.98 | | |
| caribou | 1.00 | 28.57 | 0.25 | 7.49 | 0.04 | 5.02 |
| | | | | | | |
| | 3.50 | 100.01 | 3.34 | 100.01 | 0.84 | 100.00 |

**Table 6.9 continued. Relative Frequency (RF) and Percentage Relative Frequency calculated per unit and taxon, for the Inspector Island assemblage.**

| Birds | | | | | | |
|---|---|---|---|---|---|---|
| | S6E0/L3 | | S6E1/L5 | | N3E3/L3 | |
| **Taxon** | **RF** | **%RF** | **RF** | **%RF** | **RF** | **%RF** |
| goose sp. | 0.50 | 18.18 | | | | |
| cf. Canada goose | 0.50 | 18.18 | | | | |
| Canada goose | | | 0.50 | 20.00 | | |
| eider/scoter | | | 0.50 | 20.00 | | |
| r-b merganser | | | 0.50 | 20.00 | | |
| duck sp. | 1.00 | 36.36 | | | | |
| Alcidae sculpin | | | 0.50 | 20.00 | 0.50 | 100.00 |
| black guillemot | 0.75 | 27.27 | 0.50 | 20.00 | | |
| | | | | | | |
| | 2.75 | 99.99 | 2.50 | 100.00 | 0.50 | 100.00 |

**Table 6.9 continued. Relative Frequency (RF) and Percentage Relative Frequency calculated per unit and taxon, for the Inspector Island assemblage.**

| Fish | | | | | | |
|---|---|---|---|---|---|---|
| | S6E0/L3 | | S6E1/L5 | | N3E3/L3 | |
| Taxon | RF | %RF | RF | %RF | RF | %RF |
| rainbow smelt | 0.50 | 16.5 | 0.50 | 8.82 | | |
| cf. cod sp. | | | 0.50 | 8.82 | | |
| cf. Atlantic cod | | | 0.50 | 8.82 | | |
| Atlantic cod | | | 0.50 | 8.82 | | |
| cf. sculpin sp. | 0.83 | 27.39 | 0.75 | 13.24 | | |
| sculpin sp. | 0.50 | 16.50 | 0.67 | 11.78 | | |
| cf. shorthorn sculpin | 0.70 | 23.10 | 1.75 | 30.88 | | |
| shorthorn sculpin | 0.50 | 16.50 | 0.50 | 8.82 | | |
| | | | | | | |
| | 3.03 | 99.99 | 5.67 | 100.00 | | |

**6.3.1 Quantification of S6E0/S6E1/S7E1 Level 3**

Fish remains dominated the S6E0/L3 identified sample, comprising over 77% of the identified fragments; mammal remains contributed another 20.89%, while bird fragments contributed a mere 1.16%. Figures 6.5 and 6.6 use %NISP values to illustrate the relative contribution the various taxonomic Classes made to this unit's identified assemblage and highlight the contribution of smelt, sculpin and seal taxonomic categories, in particular.

**Rainbow Smelt**

Clearly, the tiny rainbow smelt elements dominated the S6E0/L3 sample, contributing over 54% of the identified remains. Despite the high number of fragments identified to this species, MNI analysis (using 274 smelt vertebral bodies) puts this information into more realistic perspective, indicating the presence of only a minimum of 5 individuals. RF values present a different pattern of relative abundance of fish species. After applying a correction factor to all fish categories (ie. did not use vertebrae in calculation because the number of vertebrae are so variable between individuals within the same fish species, with the exception of smelt), smelt appeared to contribute about 16% of the fish sample and the combined sculpin portion made up the remaining 84% of the fish sample. As discussed in Chapter 5, it is important to keep in mind the limited usefulness of RF calculations given the small sample size. And as also discussed in Chapter

5, more confidence was placed on the MNI values than the RF values for the purpose of interpretation; the MNI values are believed to be a more realistic measure of relative abundance in this sample.

**Cottidae - Sculpin Family**

In terms of number of fragments, the combined sculpin categories made the next greatest contribution; 23% of the unit's identified sample. Figure 6.5 exhibits the contribution of the various levels of identification within the family Cottidae. As discussed in the previous section, it was suggested that the sculpin category was probably comprised mainly of members of the genus *Myoxocephalus*, particularly shorthorn and/or longhorn sculpins. There were at least three sculpin individuals in this assemblage; it is quite possible that various elements from the same three individuals were placed in different taxonomic categories within the Family Cottidae. RF values for sculpins were exaggerated because of the use of several taxonomic categories within the Cottidae Family. Perhaps it would have been more useful to calculate a single, lumped Cottidae RF value, however this would have hidden the possibility that there was more than one sculpin species present in the sample.

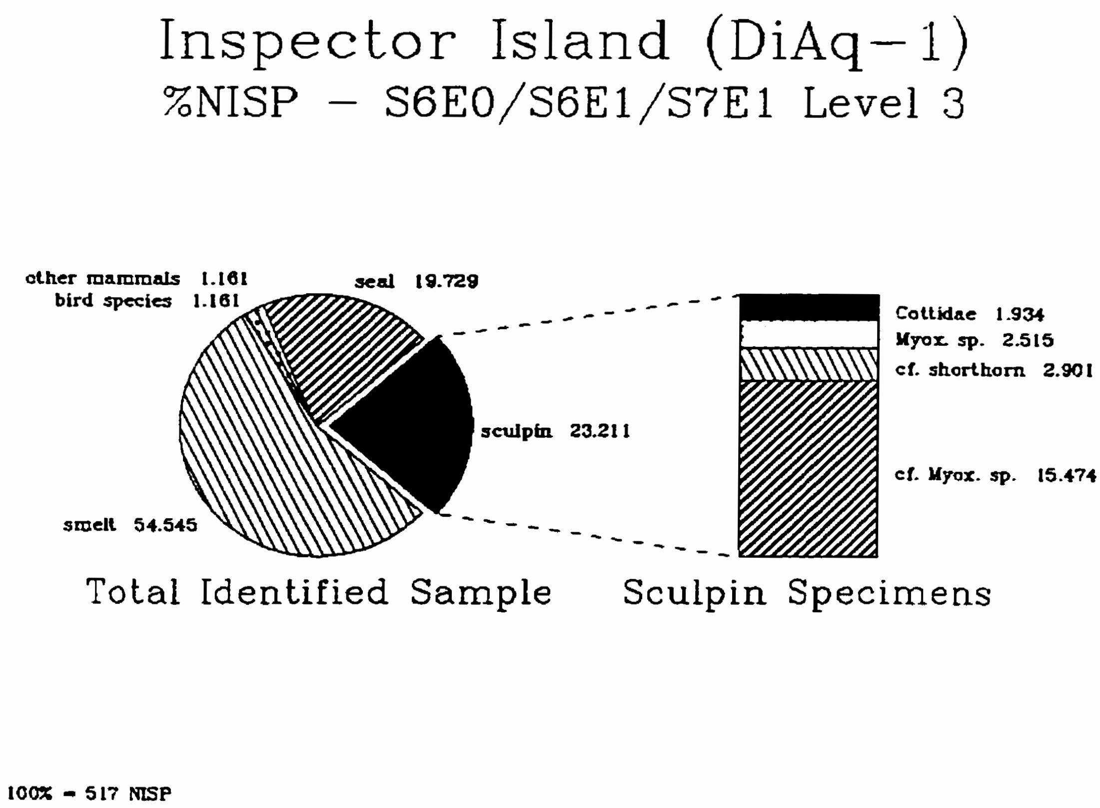



**Figure 6.5. Percentage of Number of Identified Specimens (%NISP) for S6E0/L3, illustrating the contribution of the various levels of identification within the sculpin family.**

**Gadidae - Cod Family**

A single *Gadus* sp. element represented the remaining fish category in this unit. This cod specimen contributed less than 0.2% of the NISP sample and the low frequency of this taxonomic category was too small to be labelled in Figure 6.5. Obviously the single element represented a single individual within the sample. Because this individual was represented by a single vertebra there was no RF value calculated for this taxonomic category since Class Fish vertebrae were eliminated from RF calculations during the correction stage of calculation.

**Seal**

Figure 6.6 uses %NISP values to illustrate the contribution of seal, the predominant mammal category, to S6E0/Level 3's identified sample. Over 19% of the identified sample was comprised of seal elements; 83% of the seal component was made up of elements which could only be identified to Family Phocidae. Harbour and harp seals were the only positively identified seal species within the unit comprising only 1.93% and 0.77% respectively of the unit's identified sample. Since no other seal species were identified in the entire Inspector Island faunal assemblage it is highly likely that all the fragments identified as Family Phocidae were either harp or harbour seal elements.

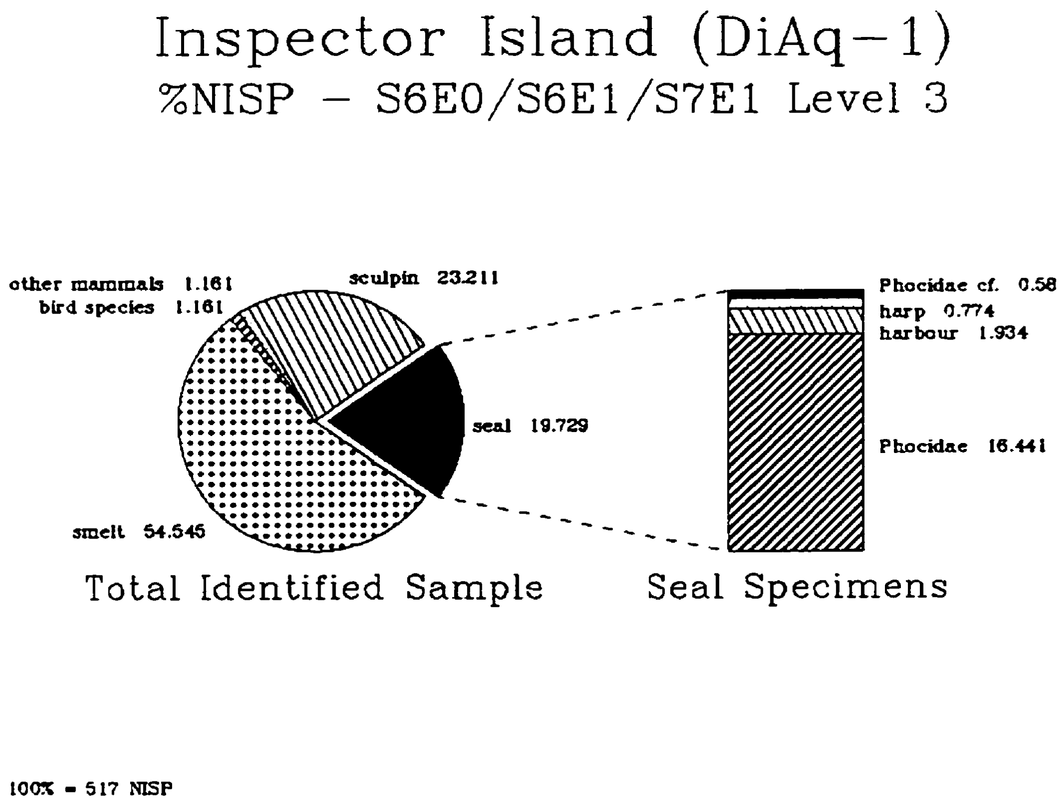



**Figure 6.6. Percentage of Number of Identified Specimens (%NISP) S6E0/L3 illustrating the contribution of the various levels of identification within the seal family.**

Figure 6.7 illustrates the distribution of seal %NISP sorted by age. In particular, this graph helps illustrate the point that there were few seal species identifications made because such a large percentage of the sample (about 57%) was from juvenile individuals. In general, there are very few elements in the juvenile seal skeleton that can be used to identify to species and none of these elements were present in the S6E0/L3 sample. The other elements relegated to the Phocidae category were too fragmentary or from non-diagnostic portions of the skeleton to be identifiable to species. Further discussion of skeletal age and patterning of body regions is presented later in Chapter 7.

The relatively high frequency of Phocidae fragments, particularly juvenile seal fragments, is tempered by examination of the MNI calculations. Refer to Table 6.8. MNI analysis indicates the presence of at least five seal individuals; one juvenile Phocidae, two immature$^{+}$ harbour seals and probably one immature harbour seal, and two immature$^{+}$ harp seals. Given the present data base the likelihood is considered to be equal that the juvenile Phocidae individual could be either a harbour or harp seal.

The combined seal fragments contributed 94.44% of the total mammal NISP. %RF values indicated that seal comprised 57% of the mammal sample. Calculation of %RF helped to correct for the over-representation of the Phocidae category due to the presence of unfused juvenile elements; the difference in

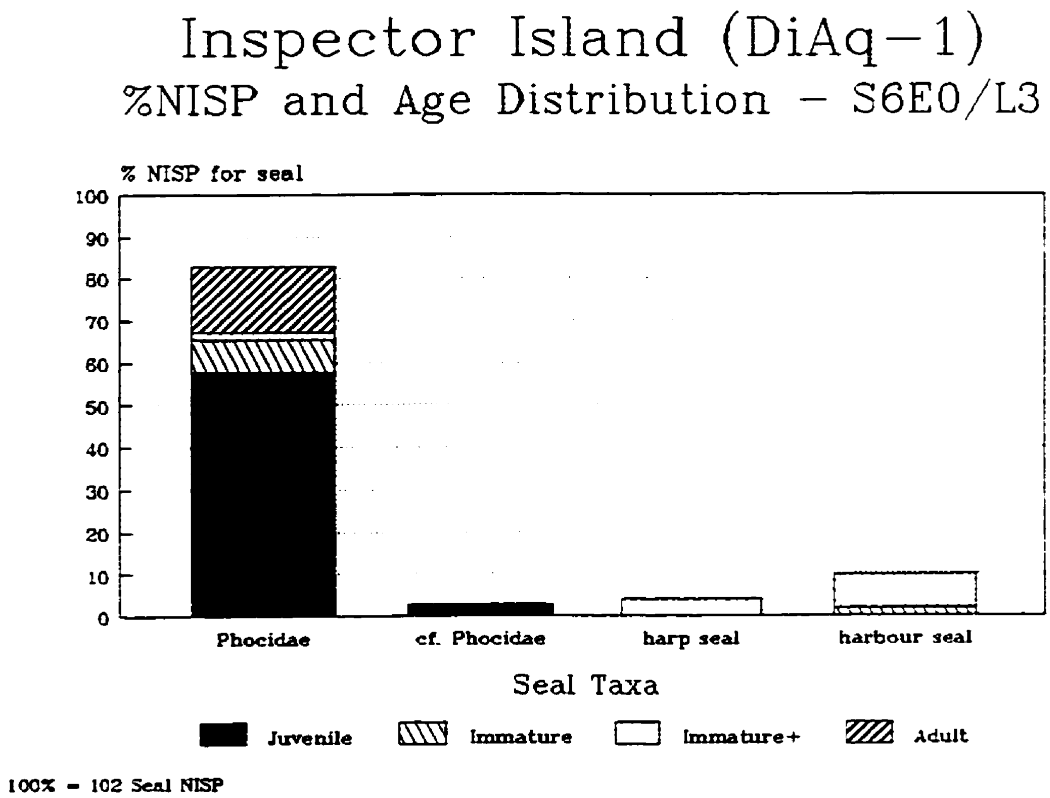



**Figure 6.7. Distribution of seal elements by age, expressed as a percentage of total identified seal specimens for S6E0/L3.**

abundance of the various mammal species was much less dramatic when RF values were compared (see Figure 6.12).

**Remaining Taxonomic Categories**

The combined remaining taxonomic categories (two mammal and four bird categories) contributed less than three per cent to the entire identified sample. The small contribution of these taxonomic groups was further accentuated when Minimum Number of Individuals (MNI) values were considered. Based on MNI calculations black bear, caribou, goose, cf. Canada goose and duck were only represented by single individuals and it is possible that the goose and cf. Canada goose elements were from the same individual. At least two black guillemot individuals were detected within the sample.

Percentage of Relative Frequency (%RF) calculations tempered the differences in raw fragment frequency between these various species within their appropriate classes. Black bear and caribou appeared to make a much more significant contribution to the mammal sample relative to the seal remains when %RF values were compared versus a comparison of NISP values. RF calculations for the bird taxa was just an exercise since three of the four taxa were represented by only a single element.

### 6.3.2 Quantification of S6E1/S7E1/S7E0 Level 5

As summarised in Table 6.7, fish, mammal and bird remains contributed 52.26%, 44.44% and 3.29% respectively to the total identified fragment count. In contrast to the screened unit S6E0/L3, there was no striking difference between the frequency of fish and mammal fragments. Figures 6.8 and 6.9 use %NISP values to illustrate the relative contribution the various species made to this unit's identified assemblage.

#### Cottidae - Sculpin Family

The combined sculpin categories comprised over 42% of the identified sample. Figure 6.8 illustrates the contribution of the various levels of identification within the sculpin family. As in the previous unit, it was suggested that the sculpin category was probably comprised mainly of members of the genus *Myoxocephalus*, particularly shorthorn or longhorn sculpins. Three shorthorn sculpin fragments were positively identified. There were definitely two Myoxocephalus individuals in the sample whose remains could very well be distributed amongst any or all of the levels of identification within the Family Cottidae. Again, the small sample size tended to result in RF values that exaggerated the difference in relative abundance of fish species and MNI values were believed to be more useful for this analysis (see Figure 6.11). However, RF values did continue to support the other

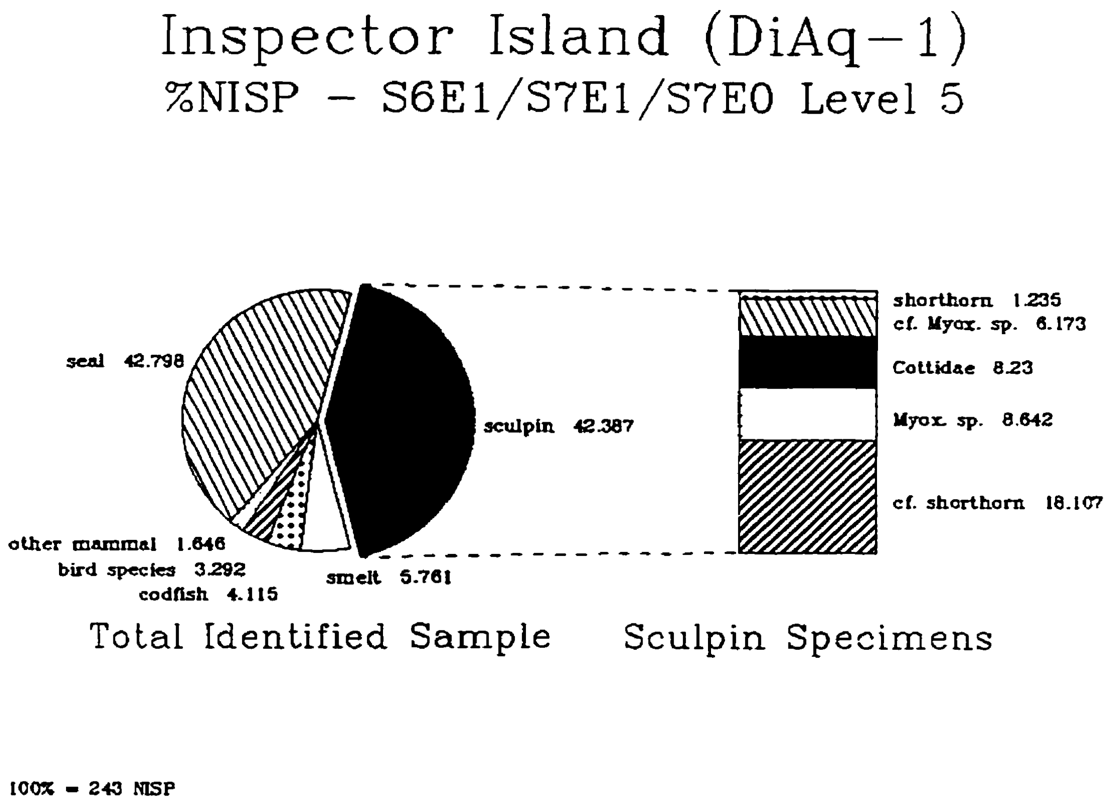



**Figure 6.8. Percentage of Number of Identified Specimens (%NISP) for S6E1/Level 5, illustrating the contribution of the various levels of identification within the sculpin family.**

measures of abundance used in this analysis which suggested that sculpin was the most frequently occurring fish taxon in this unit.

**Other Fish Species**

The remaining fish categories, rainbow smelt, and the combined cod fragments were of virtually equal abundance, representing 5.76% and 4.12% of the identified sample respectively. Both taxa were represented by one individual. When compared to MNI calculations for sculpin it was apparent that the fish sample was very small and there was really no significant difference in frequency between any of the fish taxa identified. RF calculations tended to exaggerate the presence of cod elements because the values were spread across several taxonomic categories within the cod family, giving the impression that the combined cod component would add up to a larger value than the smelt value. It was possible that elements from the one cod individual were identified to various cod taxonomic categories.

**Seal**

The Class Mammal was the next most abundant class in this unit and was dominated by seal remains. Figure 6.9 illustrated the contribution of seal in terms of the various levels of identification within the Family Phocidae expressed as %NISP. The combined seal component comprised over 42% of this unit's entire identified sample. A larger proportion of the unit's seal fragments could be identified to species than in the previous unit, however, Phocidae elements still

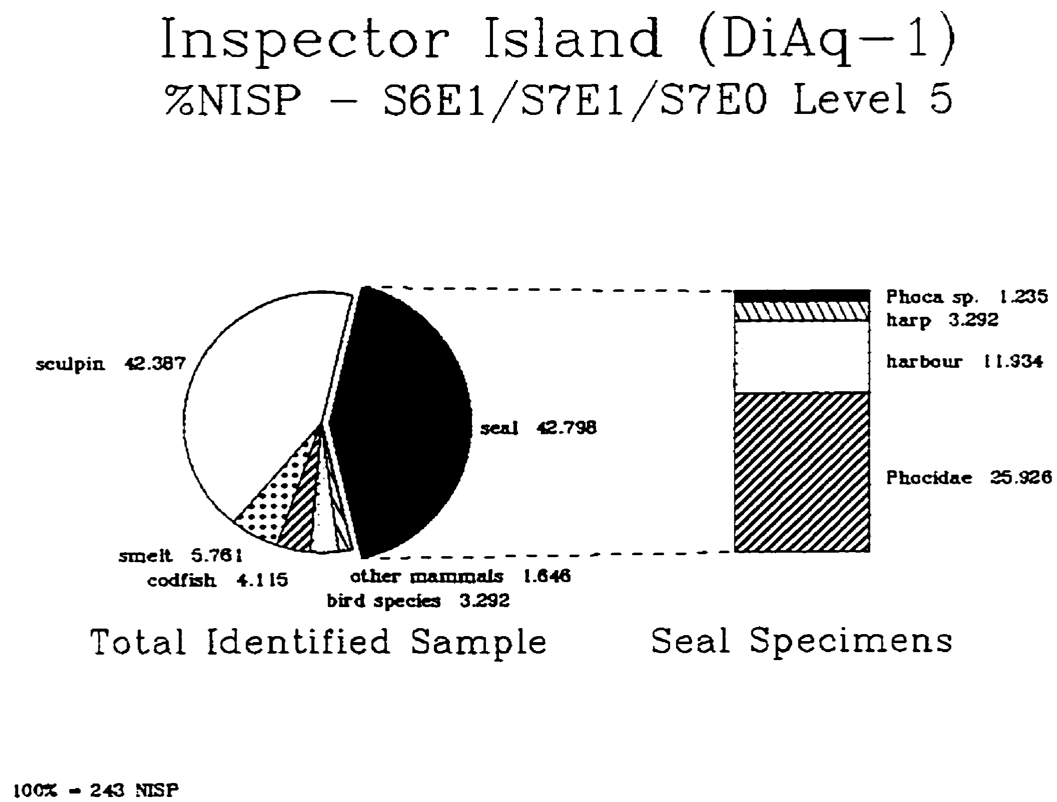



**Figure 6.9. Percentage of Number of Identified Specimens (%NISP) for S6E1/Level 5, illustrating the contribution of the various levels of identification within Family Phocidae.**

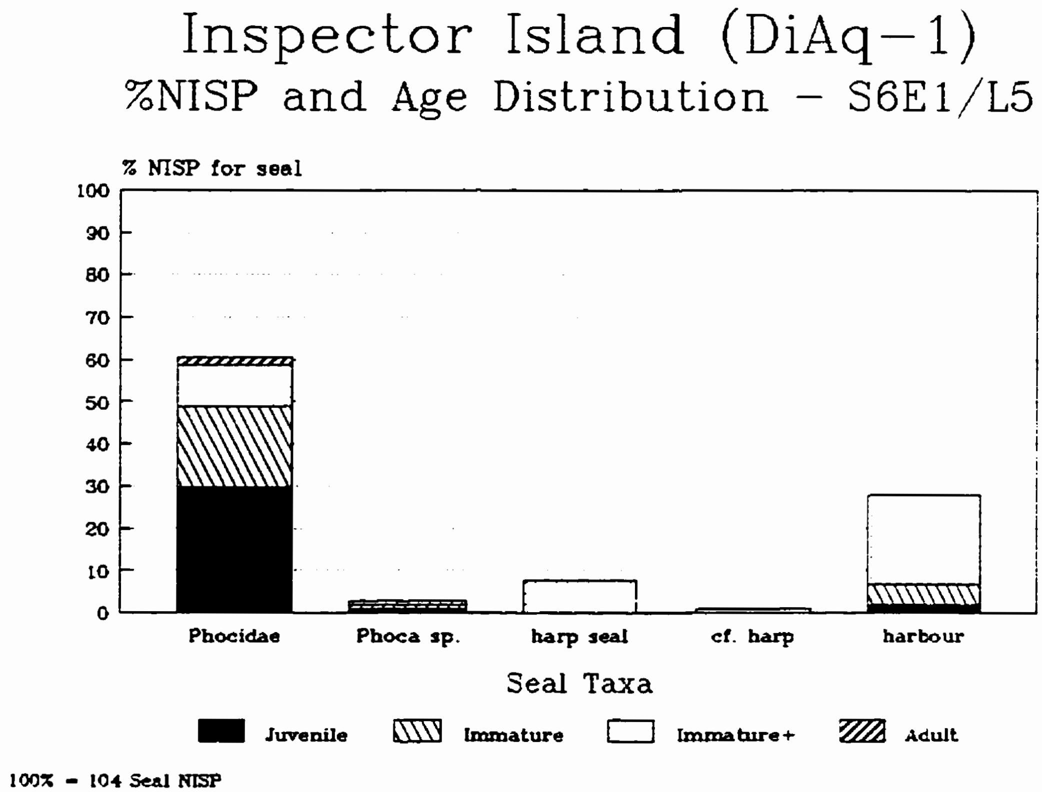



**Figure 6.10. Distribution of seal elements by age, expressed as a percentage of total identified seal specimens in S6E1/Level 5.**

contributed the majority of fragments, almost 61%, to the seal portion of the sample.

As illustrated in Figure 6.10, juvenile seal elements made up a large portion of the Phocidae fragments but were joined by about an equal number of fragments from all the other age categories. Juvenile remains comprised about 33% of all the seal fragments and so were not as great a hindrance to species identification as in the previous unit. As will be discussed later in Chapter 7, in the section on site seasonality, the identification of two juvenile harbour seal fragments was of particular interest. Harbour and harp seals were the only seal species identified, contributing 11.9% and 3.3% of the identified fragments respectively. MNI analysis revealed the presence of at least eight seal individuals in this unit: five harbour seal, two harp seals and one juvenile individual identified only to F. Phocidae. Non-diagnostic elements from these individuals were probably mixed up within the other levels of seal identification.

**<u>Other Mammal Species</u>**

While the combined seal fragments contributed over 96% of the total mammal NISP, RF analysis produced a much different pattern of relative abundance amongst the identified mammal species (see Figure 6.12). Harbour and harp seal, black bear and pine marten produced equal RF values while caribou produced 50%

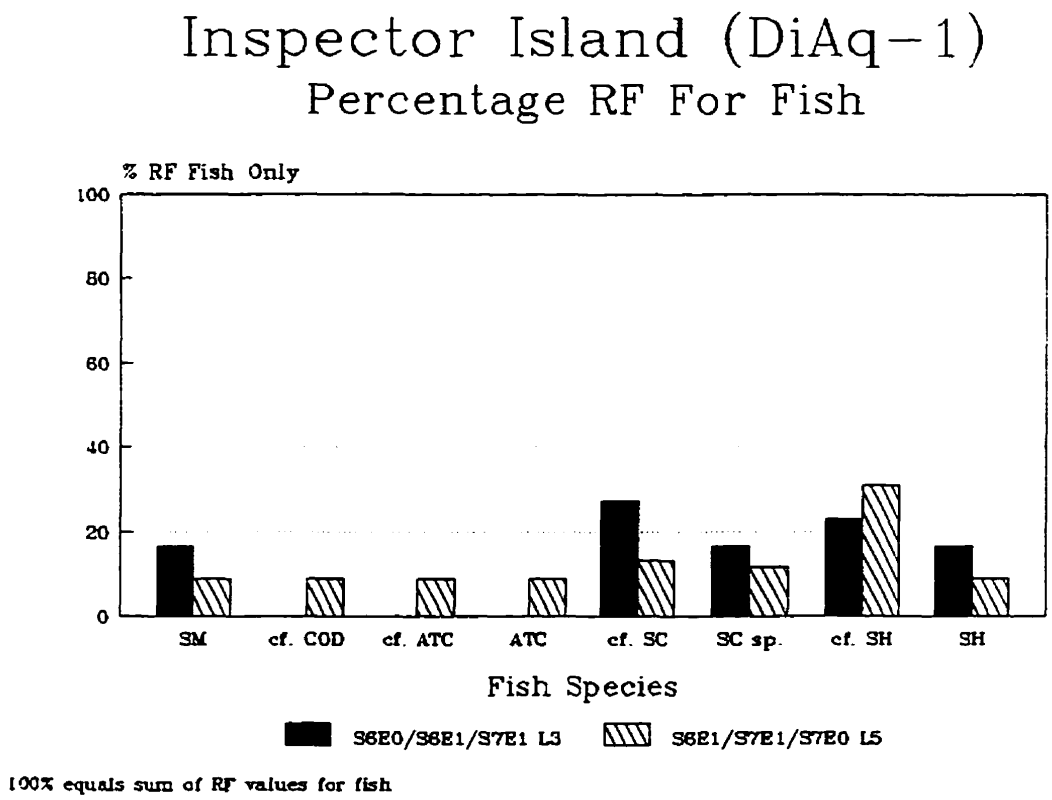



**Figure 6.11. Percentage Relative Frequency (%RF) per unit for fish only, units S6E0/Level 3 and S6E1/Level 5.**

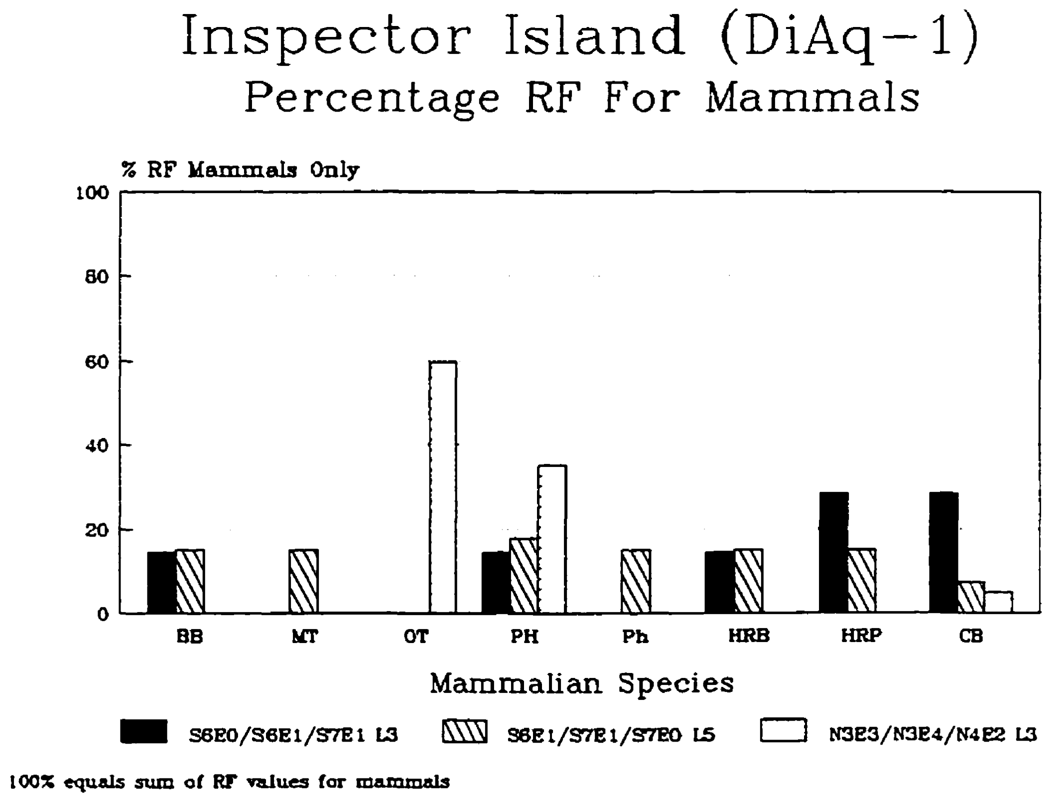



**Figure 6.12. Percentage Relative Frequency (%RF) per unit for mammals only, for units S6E0/Level 3, S6E1/Level 5 and N3E3/Level 3.**

of that RF value. However, for the purpose of interpretation, MNI values were preferred to the use of Relative Frequency. MNI values reflected a real, although likely underestimated, difference in abundance within the identified mammal sample. While there were at least eight seal individuals within the unit, bear, marten and caribou were represented by single individuals.

**Bird Specimens**

Bird remains contributed less than four percent (eight bone fragments) to the identified S6E1/L5 sample. Only two of the eight bird fragments were actually identified to species (Canada goose and red-breasted merganser). There were at least four bird individuals represented in S6E1/L5. RF analysis for this class was merely an exercise which produced equal values for all bird taxa.

**6.3.3 Quantification of N3E3/L5**

Only two classes, mammals and birds, were represented in this sample (22 identified fragments), with mammals comprising over 95% of the assemblage. Of the four taxa identified, two were species not identified in S6E0/L3 and S6E1/L5. These additional taxa were river otter and cf. murre/razorbill. Phocidae elements comprised the majority of the sample, making up nearly 60% of the fragments and producing an MNI of 2. All the other taxa produced MNIs of one. The sample was too small to produce meaningful RF values.

### 6.3.4 Quantification of Remaining Analytical Units

The four remaining analytical units (N3E7, S1E5 Level 5, S1E6 Level 5 and S3W2 Level 5) contributed twenty-five fragments to Inspector Island's identified sample. Two species were identified which had not appeared in the previous units. S1E5 Level 5 contained only beaver elements, generating an MNI of one. S1E6 Level 5 introduced red fox to the site's list of fauna, but this species was represented by only a single fragment. All the taxa identified in each of these four remaining units were represented by MNIs of one.

## 6.4 Summary of Quantification of Inspector Island Faunal Sample

To recapitulate, 3,115 bone fragments were recovered from Little Passage context. The entire sample was comprised of fish (45%), mammal (25%), bird (1%) and Class Unknown (29%) remains. Over 25% (807 fragments) of the sample was identified to at least taxonomic Family. In all, fifteen animal species were identified with certainty and one additional species was considered to be identified with 95% confidence. These species are beaver, red fox, black bear, pine marten, otter, harbour seal, harp seal, caribou, Canada goose, red-breasted merganser, black guillemot, rainbow smelt, Atlantic cod, and shorthorn sculpin. Shell fragments from blue mussel and soft-shell clam were also present but not included in the quantification process. All the species identified are still present in the immediate area of Inspector Island.

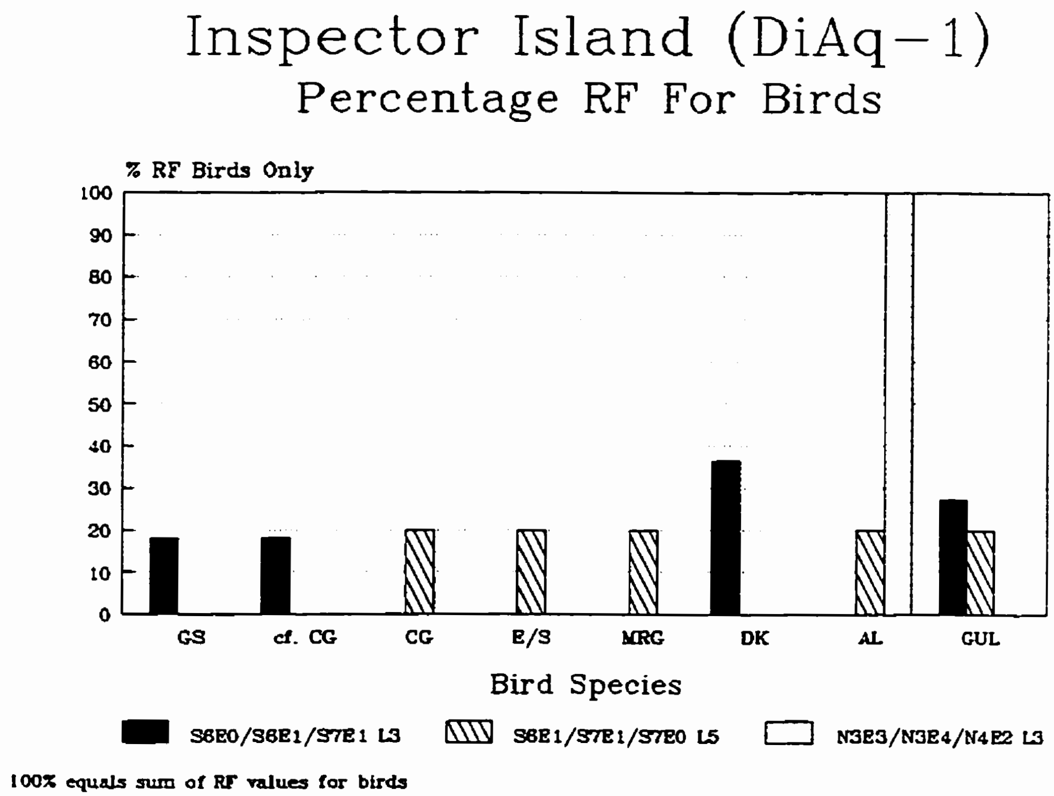



**Figure 6.13. Percentage Relative Frequency (%RF) for birds only, for units S6E0/Level 3, S6E1/Level 5 and N3E3/Level 3.**

The material was considered in the context of seven separate provenience units, with emphasis on the two units (S6E0/L3 and S6E1/L5), which produced just over 94% of the entire identified sample. Both units produced the same species with the exception of three additional species in S6E1/L5 represented by single bone fragments. All species were represented by MNI values of one or two except the following taxa discussed below. The most numerous taxa were rainbow smelt, Family Cottidae (in particular shorthorn and longhorn sculpins), and Family Phocidae (comprised of harp and harbour seal elements). There were two major differences between the samples from these two units: firstly, there was a much higher *proportion* of smelt and sculpin fragments in the S6E0/L3 sample than in S6E1/L5 and, secondly, there was a significantly higher proportion of *juvenile* seal elements to other seal *age* categories in S6E0/L3 than in S6E1/L5. In the first case, this difference can be explained by the fact that S6E0/L3 was screened and S6E1/L5 was not. The fine mesh size allowed the recovery of very tiny, light weight, fragile fish bone. Since the two units produced such similar samples in other aspects it is considered likely that had S6E1/L5 been screened it may also have produced a higher proportion of tiny fish elements. Furthermore, when these species are considered in terms of MNI values the difference between the two units virtually disappear as the tiny smelt elements resolve into an MNI value of 5 in

S6E0/L3 and 1 in S6E1/L5 and sculpin have an MNI value of 3 in S6E0/L3 versus 2 in S6E1/L5.

The second major difference between these two units, the fact that there was a larger number of juvenile seal bone fragments present in S6E0/L3 than in S6E1/L5, was diminished when the data was considered in terms of MNI values. There was evidence for only one juvenile seal in S6E0/L3, versus three juvenile seal individuals, in S6E1/L5. In fact, in terms of overall number of seal individuals in all age categories, S6E0/L3 contained evidence of five individuals (one juvenile Phocidae, two immature$^+$ harbour seals and two immature$^+$ harp seals) while S6E1/L5 contained evidence for eight seal individuals (two juvenile and three immature$^+$ harbour seals, two immature$^+$ harp seals and one juvenile F. Phocidae seal). Clearly, when comparing such small values as five versus eight seal individuals, it becomes apparent that there is actually no significant quantitative difference between the two provenience units.

Seal elements, specifically F. Phocidae and harbour seal fragments, were the only taxa to exhibit the juvenile age category. All other taxa appeared to be represented by immature$^+$ individuals.

The lack of bird remains in the entire Inspector Island sample is remarkable, particularly in S6E0/L3 where the screening results suggest there were no bird remains to be recovered. Today, sea birds are plentiful in number and variety in the vicinity of the site, suggesting sea birds were not the focus of exploitation: at least not as evidenced by the incidents that produced the units excavated.

# CHAPTER 7

## Inspector Island

## Results of Analysis: Body Region Distribution, Habitat and Season Representation, Alterations to Faunal Material

The following is a continuation of the first level of analysis of the faunal assemblage from the Inspector Island site. This chapter provides a summary of the results of analysis of body region distribution, habitat representation and season of availability of the identified species. Chapter 7 concludes with a brief discussion of apparent alterations to the faunal material such as heat exposure and cutting.

### 7.1 Distribution of Body Regions Per Species

Identified elements were sorted according to five major body regions: head (H), trunk (TK), pectoral limb (PTLB), pelvic limb (PVLB), and extremities (EX), as defined in Chapter 5. Tables 7.1 to 7.3 summarise the distribution of identified fragments per body region for each taxon in each analytical unit.

In general, it was difficult to establish body region patterning when the majority of taxonomic categories were represented by less than 5 fragments each per analytical unit. Elements identified to various taxonomic levels within a larger single taxonomic category (such as Family), were lumped together in order to form a bone grouping of analyzable size. This lumping of identified elements was done for each provenience unit and analyzed on a unit by unit basis. For example, combining all the various levels of seal or sculpin identifications into one sample produced much larger samples to work with and more complete representation of all body regions. Most of the discussion of body region patterning for Inspector Island focuses on the units S6E0/L3 and S6E1/L5 because only these units contained identified faunal samples large enough to suggest patterning of any kind.

The argument for lumping the various seal categories was as follows:

1. The most abundantly represented seal category, Phocidae, probably contained fragments from both seal species anyway.

2. A certain amount of false patterning amongst the various seal categories could be predicted as a product of the identification methods, rather than any prehistoric activity. For example, non-specific categories of identification, such as to taxonomic family Phocidae, would tend to be represented by those morphologically generalized skeletal elements which are not useful for identifying to species, such as phalanges and mid-shaft fragments of longbones, while specific identifications were represented by body regions containing those skeletal elements with diagnostic features such as the petrous region of the temporal or post-canine teeth.

3. There were not enough fragments identified to species to try to establish

patterning per species. Of course there was a risk that lumping would hide any differences in patterning between seal species. It was quite possible that the site's occupants treated harp seals differently from harbour seals, but the sample size did not permit species specific analysis of body region patterning.

### 7.1.1 Body Region Analysis of S6E0/S6E1/S7E1 Level 3

Body region analysis focused on the three most prevalent taxonomic categories; rainbow smelt, sculpin and seal (see Table 7.1). Ninety-nine percent of the rainbow smelt sample was comprised of vertebrae, producing an MNI of 5. Two skull elements made up the rest of the smelt sample. The ratio of vertebrae to skull elements suggests that smelt heads may have been discarded elsewhere. While smelt vertebrae may be slightly more robust than smelt skull elements this fact is not enough to explain this extreme ratio of preserved material. Nonetheless, an MNI of five tempers any inferences to be drawn from this data regarding the preparation of smelt.

With an MNI of 3, over 58% of the lumped sculpin sample was comprised of vertebrae, over 28% were skull elements, while the final 13% were pectoral fin elements. Based on this information, it was considered likely that whole sculpin were present in the sample.

**Table 7.1. Distribution of skeletal elements by body region for S6E0/L3. Note that the abbreviation EX-U represents extremity fragment from unknown limb.**

**Body Region**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| Phocidae | 19 | 40 | | 6 | 2 | 1 | | 5 | 15 |
| harbour seal | 6 | | | | | | | 4 | |
| harp seal | 4 | | | | | | | | |
| | | | | | | | | | |
| Seal combined | 29 | 40 | 0 | 6 | 2 | 1 | 0 | 9 | 15 |
| | | | | | | | | | |
| black bear | 3 | 1 | | | | | | | |

**Table 7.1 continued. Distribution of skeletal elements by body region for S6E0/L3.**

**Body Region**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| caribou | | 2 | | | | | | | |
| | | | | | | | | | |
| black guillemot | | | | 2 | 1 | | | | |
| goose, large | | | | | | | 1 | | |
| cf. Canada goose | | | | | 1 | | | | |
| duck | | | | | | 1 | | | |

**Table 7.1 continued. Distribution of skeletal elements by body region for S6E0/L3.**

| | | | **Body Region** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Taxon** | **Head** | **Trunk** | **Pectoral Limb** | | | **Pelvic Limb** | | | **EX-U** |
| | | | **PTG** | **LB** | **EX** | **PVG** | **LB** | **EX** | |
| rainbow smelt | 2 | 280 | | | | | | | |
| sculpin combined | 34 | 70 | | 16 | | | | | |
| *Gadus* sp. (cod) | | 1 | | | | | | | |

In terms of body region distribution, the *combined* seal category was the most completely represented taxonomic grouping in the identified sample, as compared to individual seal taxonomic groupings or any other identified species in the sample. All five of the major body regions were represented as can be seen in Table 7.1. Figure 7.1 illustrates seal body region distribution and the contribution of each identified seal taxa to the overall pattern.

In order to illustrate the high proportion of seal extremities present in the sample, Figure 7.1 combined all fragments identified to be from the wrist or ankle and distal, in one category called total extremities (EX-T). As a result, those extremity fragments whose limb origin were known were not included in the pectoral and pelvic limb bars of Figure 7.1, but instead were included in the total extremities (EX-T) bar. This is a different means of sorting as compared to Table 7.1 where those extremity fragments of known limb were separated into their source limb totals and only those fragments of unknown limb origin were included in the category referred to as extremity, limb unknown (EX-U).

In terms of NISP, the trunk was the most frequently represented region, comprising over 39% of the seal sample. Over 28% of the sample derived from the head region. The combined extremity category was the next most highly represented area in terms of NISP, comprising over 25% of the seal component.

The pectoral limb was represented by a slim 5.89% (not including the extremity fragments) of the identified fragments, while the pelvic limb was represented by .98%, or in other words, one fragment (not including the extremity fragments).

The entire seal trunk component was represented by Phocidae elements, almost all of which were from juvenile vertebrae. The apparent dominance of this body region was exaggerated by the fact that almost every vertebra was unfused and the unfused component parts of each single vertebra were counted as individual fragments. A single, unfused vertebra has five bone growth centres and hence, the potential to contribute five fragments to the sample. Figure 7.2 illustrates the contribution of the various seal age categories to the distribution of seal fragments per body regions and highlights the dominance of juvenile seal fragments, particularly in the trunk region.

For the purpose of interpreting the body region data the following approach was taken with the juvenile vertebrae data to help correct for their exaggerating effect on the trunk region. Basically, the juvenile vertebrae figures for each vertebra type (i.e., cervical, thoracic, lumbar, and sacral) were divided by five, to roughly estimate minimum number of whole juvenile seal vertebrae present in unit S6E0/L3. The fact that many of these fragments could be cross-matched lent further support for taking this approach. When applied, the juvenile vertebrae fragment count decreased from a raw NISP of 35 fragments to a corrected

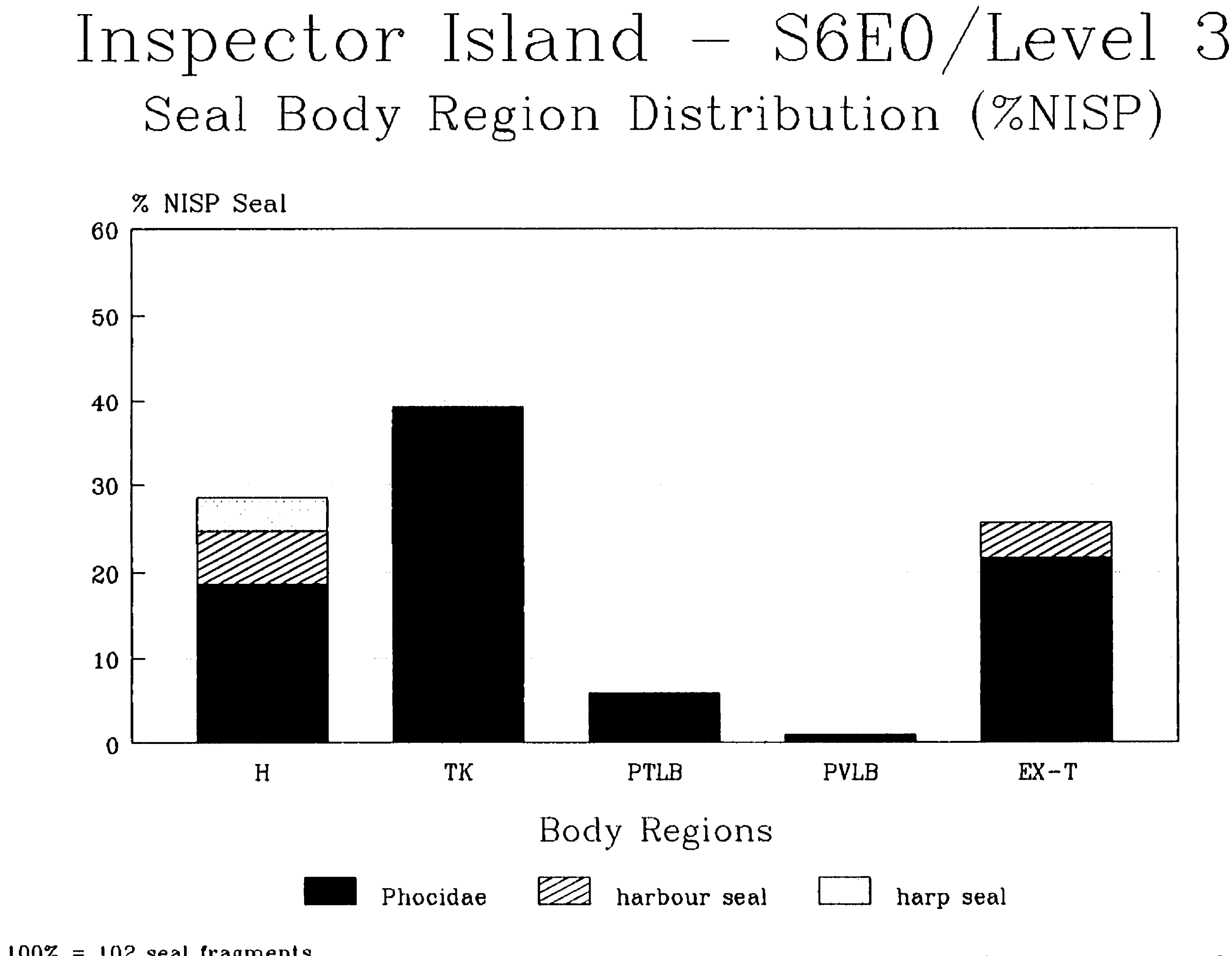



**Figure 7.1. Distribution of percentage of number of identified seal specimens (%NISP) by body region for S6E0/L3, illustrating contribution per taxonomic category.**

minimum number of 8 juvenile vertebrae. Thus the %NISP representation of the trunk region was reduced from 39% to 19%, substantially altering the relative proportions of the other body regions. It was interesting to note that the only immature⁺ trunk material was a single fragment of cervical vertebra.

Over 28% (43% after applying the correction to the trunk material) of the identified seal fragments were derived from the head region. Mandible and maxilla fragments made up a small portion of this sample but the majority of head elements were teeth and fragments of temporal bone in the region of the ear. All the teeth were canines and incisors which are not species indicators and so were attributed to the Phocidae category. The temporal fragments came from the area of the petrous region and auditory bullae. This area of the temporal is quite dense and preserves well. In addition, this area of the head is an important seal species identifier. All temporal fragments were identified to species; in fact, the entire harp seal sample and 60% of the harbour seal sample were comprised of temporal fragments.

Almost 26% (39% after applying the correction to the trunk material) of the seal fragments were attributed to the region classed as extremities, that is, to those elements found from the wrist and ankle and distally. The elements included in this body region were tarsals, carpals, metapodials and phalanges. Osteologically mature tarsals and carpals are virtually solid bone, and metapodials and phalanges

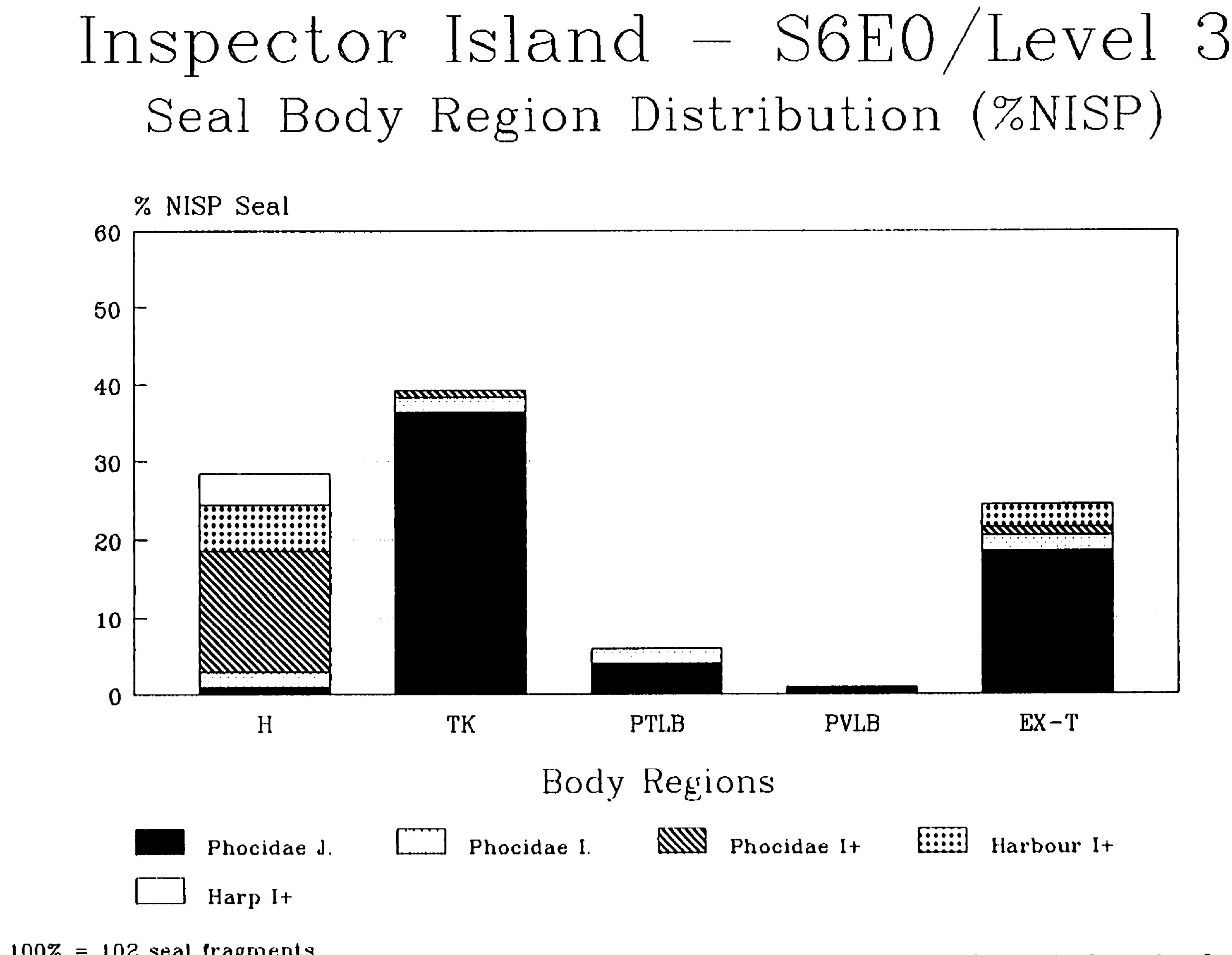



**Figure 7.2. Distribution of percentage of number of identified seal specimens (%NISP) by body region for S6E0/L3, illustrating contribution per age category.**

are also very sturdy elements with small marrow cavities and dense bone cortex. Forty percent of the elements identified as harbour seal were tarsals which are morphologically specific elements for seals. The high proportion of unfused juvenile material (73% of EX-T) definitely had a significant affect on the large NISP in this region. Unlike the trunk region, however, a much smaller proportion of these fragments could be cross-matched, indicating that these unfused elements did not come from the same individual element, but actually represented the presence of a larger proportion of separate skeletal elements than were present in the trunk portion of the sample.

As Table 7.1 shows, the seal fore and hind limbs were represented by a very small quantity of skeletal fragments (8 and 10 fragments respectively, when including extremities). The pectoral limb was represented by the humerus, radius, ulna and carpals, while the pelvic limb was represented by an innominate fragment and tarsals. Conspicuous in their absence were scapula, femur, tibia and fibula fragments.

Taking into account the various factors just discussed, specifically, skeletal age, the correction for over-representation of the juvenile vertebral fragments and the creation of a total extremity (EX-T) category, a pattern of seal body part representation emerges from the S6E0\L3 data. The head and extremity regions are represented in similar proportions, and are, by far, the most frequently represented regions. There is no evidence to suggest that this pattern is due to poor preservation of limb material; the end portions of limb bones can be as sturdy as any of the head and foot elements recorded for this unit. Furthermore, while juvenile elements are distributed amongst all five regions, the larger, more sturdy, immature$^+$ material is limited, almost exclusively, to representation in the head and extremity categories. It appears that all parts of juvenile seals were processed/consumed/disposed of in this provenience unit while there is a slight suggestion that adult harp and harbour seals were processed only to the extent that their heads and "hands" and "feet" from the wrist/ankle down, were used and/or left at this unit and the rest of the adult sized animal, was taken elsewhere; to another part of the site or off the site altogether.

Two possible explanations for this adult seal pattern are suggested here. The seal fore limb, particularly at the shoulder, is a highly muscular appendage because the function of this limb is to pull the animal through the water. It is the personal experience of the author that separating the forelimb from the rest of the seal is an easy task and provides a large, self-contained package of meat containing the scapula, humerus, radius and ulna. It would have been a convenient package to transport, with or without the "flipper" portion of the limb.

A second suggestion is that the long bones of the adult sized seals of both species were missing because they had been destroyed during the process of grease extraction. It was suggested that perhaps these marrow bearing elements were being processed for the purpose of grease extraction analogous to that carried out by the Naskapi-Montagnais. This native group ground up the long bones of caribou, boiled the resultant mashed bone and skimmed off the grease which rose to the surface. This process created a recognizable feature in the archaeological record, namely a pit in the ground exhibiting heat exposed soil, a layer of "bone mash" and overlying grease-stained soil. While the Naskapi-Montagnais used caribou instead of seal long bones, there is evidence to support the possibility that the people of the Little Passage complex may have practised bone grease extraction. Inspector Island, the Beaches, and Boyd's Cove have all produced Beothuk hearth features containing the characteristic pit exhibiting heat exposure, a layer of "bone mash" and grease stains (Pastore 1987:9; 1986:221; MacLean 1990:10). The Spence site at Port au Choix has provided such a feature in a prehistoric context, indicating a continuity for this type of behaviour from the early portion of the Recent Indian period (Renouf 1993:73). The grinding of the long bones during this process would have effectively removed these seal elements from the identifiable portion of the faunal assemblage.

### 7.1.2 Body Region Analysis of S6E1/S6E0/S7E1/S7E0 Level 5

As in S6E0/L3, body region analysis focused on the most prevalent taxonomic categories; rainbow smelt, sculpin, seal and, unlike S6E0/L3, an additional category for cod. The most frequently occurring fish category, sculpin, exhibited a very similar proportion of trunk to head to pelvic elements as in S6E0/L3. Again, there was a sense that whole sculpin individuals were present. The proportion of trunk to head elements from rainbow smelt was much closer than in S6E0/L3. Although smelt vertebrae did outnumber head elements the significance of this difference was unclear given the much smaller sample size (NISP = 14) present in the current unit versus S6E0/L3 (NISP = 282). It is not known how this ratio of head to vertebral elements was affected by the fact that this unit was not screened like S6E0/L3 was. The small cod sample (NISP = 10), exhibited a virtually equal proportion of head to trunk elements suggesting whole cod were present in the sample.

In terms of body region distribution, the combined seal category was, again, the most completely represented taxonomic grouping. As can be seen in Figure 7.3, all five of the major body regions were represented. See Figure 7.4 for the distribution of seal elements by body regions which considers the contribution of the various seal age categories. Since, overall, juvenile elements made a significantly smaller proportion of this unit's sample, in contrast to S6E0/L3,

**Table 7.2. Distribution of skeletal elements (NISP) by body region for S6E1/L5.**

**Body Region**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| Phocidae | 26 | 23 | | 6 | | 1 | 1 | 1 | 5 |
| *Phoca* sp. | 1 | 1 | | | | | | 1 | |
| cf. harp seal | | 1 | | | | | | | |
| harp seal | 7 | | | | | | | 1 | |
| harbour seal | 20 | 2 | | 1 | | | | 6 | |
| | | | | | | | | | |
| Seal combined | 54 | 27 | 0 | 7 | 0 | 1 | 1 | 9 | 5 |

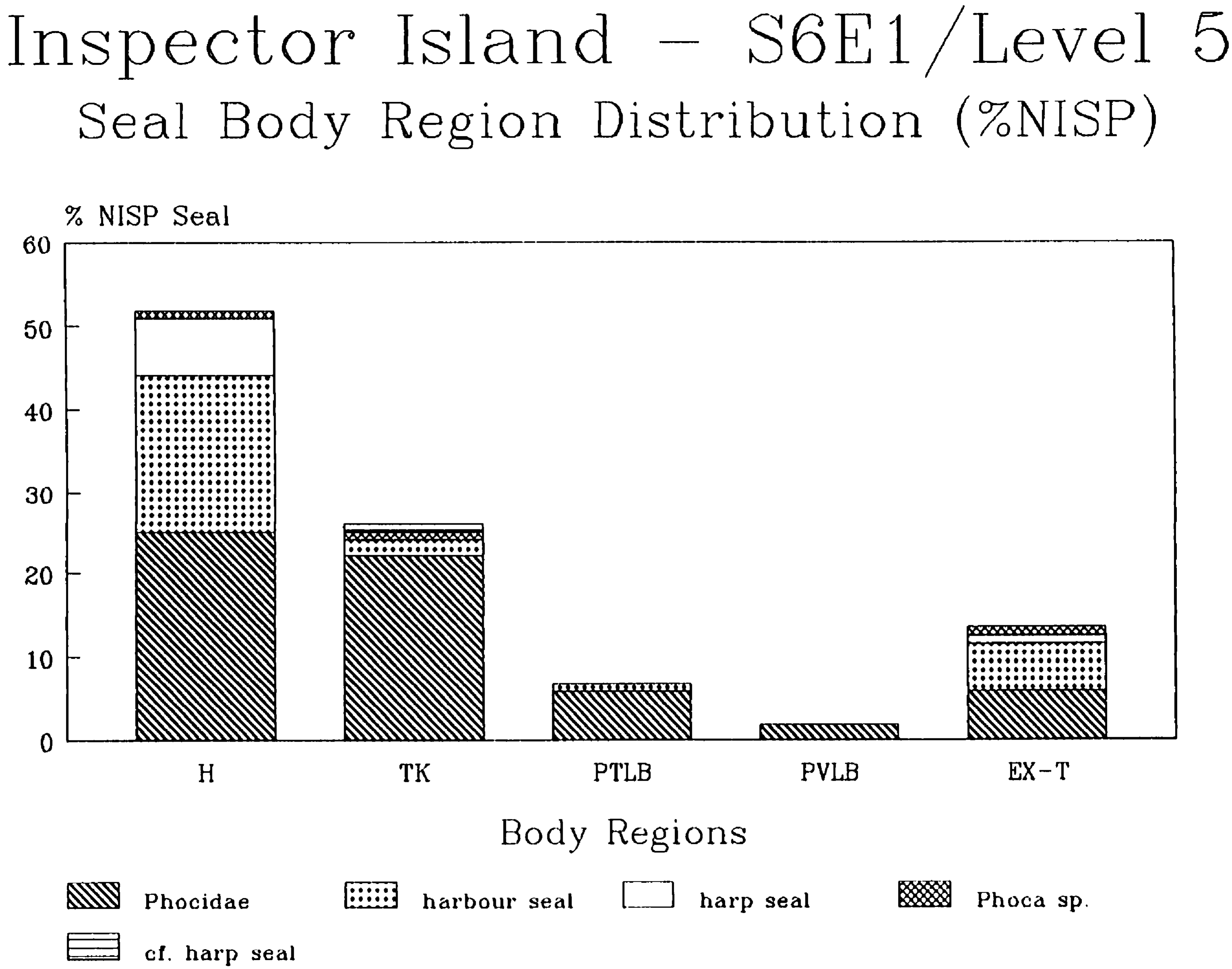
**Table 7.2 continued. Distribution of skeletal elements (NISP) by body region for S6E1/L5.**

**Body Region**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| black bear | 1 | | | | | | | | |
| pine marten | | | | | | | 1 | | |
| cetacean | 1 | | | | | | | | |
| caribou | | | | | | | | 1 | |
| black guillemot | | | | | | | 1 | | |
| cf. goose | | | | | | | 1 | | |
| goose | | | | 1 | | | | | |
| cf. Canada goose | | | | 1 | | | | | |

**Table 7.2 continued. Distribution of skeletal elements (NISP) by body region for S6E1/L5.**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| eider/scoter | | | | | | | 2 | | |
| red-breasted merganser | | | 1 | | | | | | |
| | | | | | | | | | |
| rainbow smelt | 3 | 11 | | | | | | | |
| cod | 4 | 6 | | | | | | | |
| sculpin | 40 | 58 | | | | | 5 | | |




100% = 104 seal fragments.

**Figure 7.3 Distribution of percentage of number of identified seal specimens (%NISP) by body region for S6E1/L5, illustrating contribution per taxonomic category.**

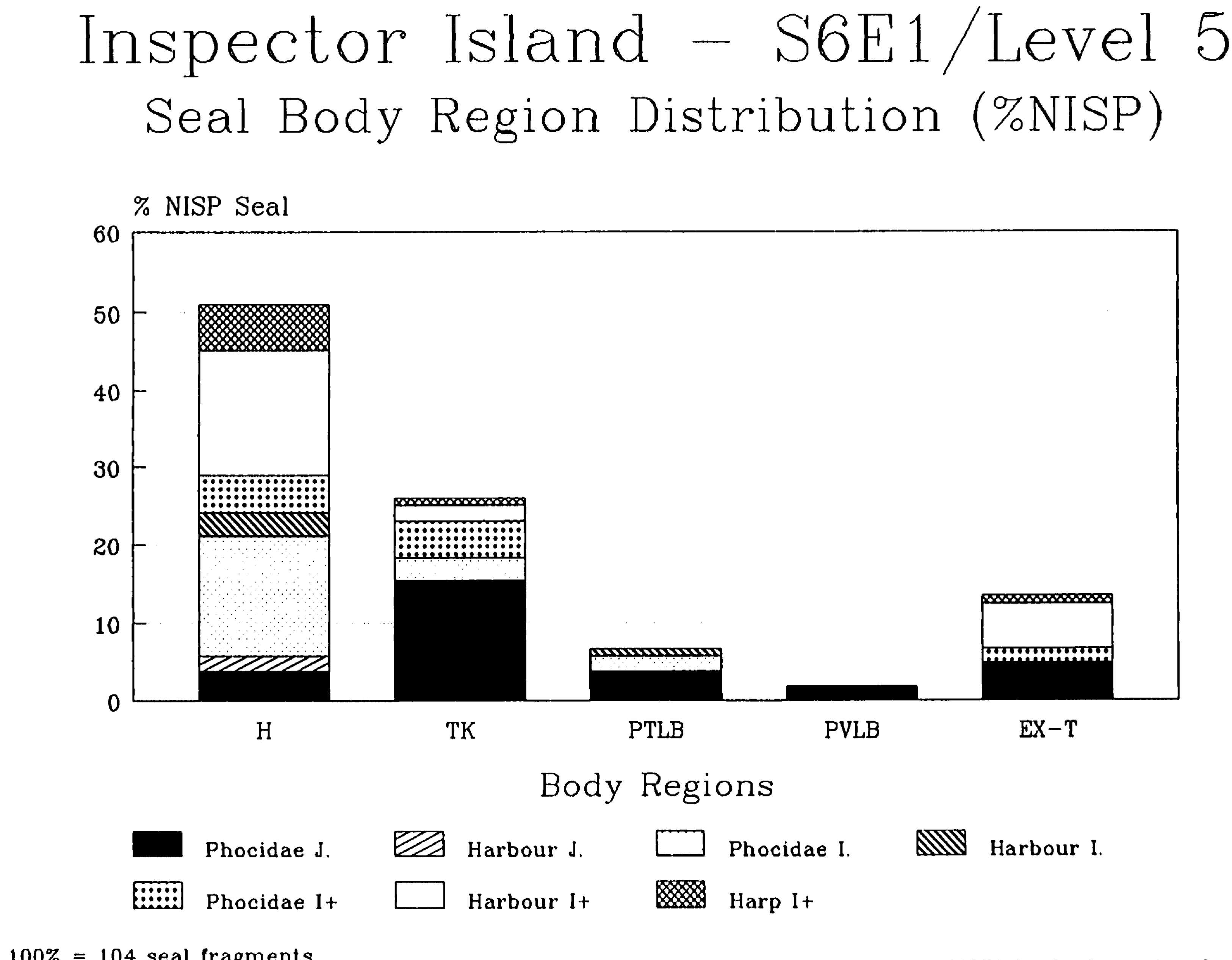



**Figure 7.4. Distribution of percentage of number of identified seal specimens (%NISP) by body region for S6E1/L5, illustrating contribution per age category.**

unfused juvenile seal elements did not have the same exaggerating effect on any particular body region as occurred in the trunk and extremity regions in unit S6E0/L3. However, in order to make the two units comparable the correction for juvenile vertebral fragments was also applied to S6E1/L5. After the correction was applied, both units exhibit similar relative proportions amongst the five major body regions.

In terms of NISP, the head was the most frequently represented region, comprising almost 52% (56% after correction applied) of the seal sample. About 26% (21% after correction) of the sample was derived from the trunk region. The combined extremity category was the next most highly represented area in terms of NISP, comprising about 14% (remained 14% after correction) of the seal component. The pectoral limb and pelvic limb regions made up the remaining 7% and 2% respectively of the entire seal component and were not perceptibly affected when the correction for juvenile vertebral fragments was applied.

About 52% of the identified seal fragments were derived from the head region. Teeth and temporal fragments (accompanied by several minute inner ear bones) again comprised the majority of the head material and provided elements identifiable to harp and harbour seal. Overall, roughly half of the head fragments were from young seal while the other half were from osteologically mature individuals. The most remarkable identifications were two juvenile harbour seal mandibles which represented an MNI of two. These mandibles were the only juvenile seal elements in the entire site that could be identified to species.

Skeletal fragments falling into the trunk region made up about 26% of this unit's identified seal sample. While over two-thirds of this material originated from juvenile and immature individuals. The rate of cross-matching was much lower in this sample than in the previously discussed S6E0/L3. Application of the correction for juvenile vertebrae only reduced the relative contribution of this region to 21% of the seal NISP for this unit. The osteologically adult material was comprised of both rib (NISP = 2) and thoracic (NISP = 5) and lumbar (NISP = 1) vertebra fragments indicating the presence of the mid-body section of at least one adult harbour seal.

Fourteen percent of the identified seal material was made up of extremity fragments. Juvenile and osteologically mature specimens were basically equally represented. Long bones from the pectoral and pelvic limbs comprised 7% (7 fragments) and 2% (2 fragments) of the NISP and were only represented by juvenile and one immature individuals. The pectoral limb was represented by the humerus and radius while the pelvic limb was represented by a tibia and hip fragment. There were no scapula, ulna, carpal, metacarpal, femur or fibula fragments detected.

Overall, this unit exhibited a similar pattern of seal body region distribution to

S6E0/L3, with the majority of material coming from the head, trunk and extremity regions and the major portions of the pectoral and pelvic limbs being scarcely represented. Osteologically mature specimens appeared only in the head, extremity and trunk region and were absent from the main portions of the limbs. As in S6E0/L3, it appears that the creation of this provenience unit was related to the processing/disposal of all parts of juvenile seals and only the head, "hands" and "feet" of adult harp and harbour seals suggesting the rest of the adult seals were dealt with elsewhere.

### 7.1.3 Body Region Analysis of N3E3/L5 and Remaining Units

The faunal assemblages of the remaining units did not introduce any seal elements that were not present in S6E0/L3 or S6E1/L5. Two of the three mammal species (red fox and beaver) not present in the previous two units were represented in the head region only, specifically, by teeth and jaw fragments. The third new species, river otter, was represented by skull fragments as well as one vertebral fragment. See Table 7.3 for the summary of body region distribution for these remaining units.

**Table 7.3. Distribution of skeletal elements (NISP) by body region for N3E3/L5 and remaining units.**

**Body Region**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| **N3E3/L5** | | | | | | | | | |
| Phocidae | 3 | 2 | | | 1 | | | | 7 |
| caribou | | | | | | | | | 3 |
| river otter | 4 | 1 | | | | | | | |
| cf. murre/razorbill | | | | 1 | | | | | |
| **N3E7** | | | | | | | | | |
| harbour seal | 1 | | | | | | | | |
| cf. caribou | 1 | | | | | | | | |

**Table 7.3 continued. Distribution of skeletal elements (NISP) by body region for N3E3/L5 and remaining units.**

**Body Region**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| **S3W2 L5** | | | | | | | | | |
| harbour seal | | 1 | | | | | | | |

### 7.1.4 Summary of Body Region Patterning in Inspector Island Faunal Assemblage

Section 7.1 organized the Inspector Island faunal data in terms of body region patterning. The two largest analytical units, S6E0/L3 and S6E1/L5, were the focus of the discussion and the three best represented taxonomic categories, F. Phocidae, rainbow smelt and sculpins, were looked at in the most detail. All other taxonomic categories were represented by five or less bone fragments making it impossible to establish any pattern of body region representation.

Seal material provided the most promising data regarding body part patterning. In order to obtain an analyzable sample size, all the various levels of seal identification were lumped into the one seal family category. It was recognized that this process would hide any differences in treatment between the two seal species known to be present in the samples. The validity of this approach was argued in section 7.1. Analysis showed that juvenile and adult-sized seals were treated differently. All body regions of the juvenile seals were present in the sample while basically only the head, "hands" and "feet" of the adult seals were present. The data suggested that these Inspector Island provenience units represented the complete processing of baby seals and the initial processing of the huge adult seals in preparation for further processing elsewhere.

The next most numerous taxonomic groups, rainbow smelt, sculpin and cod appeared to be represented in all body regions, suggesting that the provenience units S6E0/L3 and S6E1/L5 were involved in the processing of whole specimens from these taxonomic groupings.

## 7.2 Season of Availability of Species Identified in Inspector Island Faunal Assemblage

Modern natural history records were used to infer season of availability for species identified in the Inspector Island faunal assemblage. As summarized in Tables 7.4 to 7.6, all the units contained species which were available near the site throughout the year. What was lacking were species which were good indicators of specific times of the year. However, year round residents were considered in terms of when they were most easily available and some tentative patterns were suggested.

### 7.2.1 Season of Availability - S6E0/S6E1/S7E1 Level 3

This analytical unit contained species which are currently available year round either on Inspector Island, in the adjacent waters or on that portion of the main island of Newfoundland immediate to Inspector Island. However, there are some more specific indications for faunal exploitation between late winter and fall and these are discussed below.

The presence of a large proportion of juvenile seal fragments was an indicator of late winter to summer exploitation. An extended period from late February into

**Table 7.4. Months of availability of species identified in Inspector Island faunal assemblage, provenience unit S6E0/S6E1/S7E1 Level 3, based on modern natural history records.***

| | J F M A M J J A S O N D |
|---|---|
| **S6E0/S6E1/S7E1 Level 3** | |
| black bear | ------------------------------------------------------------ |
| Phocidae*■ | ----------^^^^^^^^^^^^^^^^^^^^^^^^^^^^?------------------------ |
| harbour seal | ------------------------------------------------------------ |
| harp seal | -          ——————          - |
| caribou | ------------------------------------------------------------ |
| black guillemot■ | ----------------?N——N?------------------------------------ |
| goose | ------------------------------------------------------------ |
| cf. Canada goose | ?-----------------------------? |
| duck | ------------------------------------------------------------ |
| rainbow smelt | ----------------------S——S?          -------------------- |
| codfishes | ------------------------------------------------------------ |
| sculpins | ----------------?——————————————?---------- |
| shorthorn sculpin | ------------------------------------------------------------ |
| longhorn sculpin | ----------------?——————————————?-------------------- |
| soft-shell clam° | ----------------?t----------------------------t?-------------------- |

* "^" symbols indicate that this unit contained juvenile elements for this taxonomic category and highlights the months of their availability.

■ Bold symbols indicate that this species is more likely to be available near the site during the highlighted months of the year.

▪ "N" indicates species nesting in small numbers on difficult to reach sea cliffs (Peters and Burleigh 1951).

• Question marks indicate that there is some variation from year to year, in the arrival and/or departure dates for the species and that available natural history references provide undefined seasons rather than specific months or weeks of the year for arrival and departure times.

° "t" symbol indicates that this species is toxic during the enclosed period.

* Seasonality information for bird species taken from Montevecchi and Tuck (1987), Burrows (1989), Threlfall (1983) and Peters and Burleigh (1951). Harp seal seasonal information taken from Bowen (1989) and Lien (1985). Harbour seal information taken from Beck (1983) and Lien (1985). Terrestrial mammal species information taken from Cameron (1958).

---

August was inferred during which time juvenile harp and harbour seals would have been available. Without a juvenile seal element identified to species it was not possible to infer a narrower period of time. Mature harp seal remains are most likely indicative of a period from late February until the end of April or the beginning of May. At this time, harp seals are whelping, breeding and moulting on the offshore ice (Bowen 1989:4). However, it is possible that mature harp seals were taken during the brief period of their southward migration in mid-December.

Canada geese are presently breeding migrants who live in the area from about the beginning of April until September. Unfortunately the Canada geese fragments did not exhibit medullary bone, which would have suggested the bird had died during the nesting period. Canada geese nest anytime between the beginning of April and the end of May (Peters and Burleigh 1951:83). It should also be noted that rare sightings of Canada geese have been recorded for every month of the year (Peters and Burleigh 1951:83).

Rainbow smelt are more easily obtained when they congregate in river estuaries in the fall and through the winter but are particularly vulnerable during their spawning period, which usually occurs for about two weeks between early April and early May in the area of Notre Dame Bay (Scott 1981:33;Department of Fisheries and Oceans 1984:5;Nhwani 1973:58). Although black guillemot's live in the area year round, they would be more easily obtained during their nesting period which occurs sometime between late March and early April to mid-May.

Usually caribou are most fit and fat and hence, most attractive, in the late summer and early winter. Unfortunately there were no immature caribou remains to help support an interpretation of a late summer to early winter exploitation. The small number of caribou fragments (NISP = 2) suggest that caribou did not make a significant contribution to the excavated unit.

### 7.2.2 Season of Availability - S6E1/S7E0/S7E1 Level 5

This unit contains the same seasonal indicators as the previous sample plus three additional pieces of evidence for more specific times of the year. Table 7.5 illustrates the availability by season of the animals identified in S6E1/L5. Juvenile harbour seals are presently available in the area from the beginning of May (Beck 1983:4) until perhaps the end of August or September when their skeleton would have outgrown its juvenile texture. The particular juvenile harbour seal specimens identified in this unit were completely covered in juvenile cortex indicating they died during their first spring or by early July at the latest. Red-breasted mergansers are breeding residents of Newfoundland, breeding inland as well as on the inshore coast. They prefer to winter in coastal salt water (Montevecchi and Tuck 1987:225; Burrows 1989:81; Godfrey 1986:120). Although Atlantic cod are available in the surrounding waters year round, they are more likely to be close to the shoreline in shallower waters when pursuing the capelin that run during the month of June (Department of Fisheries and Oceans 1989:2).

### 7.2.3 Season of Availability - N3E3/N3E4/N4E2 Level 5 and Remaining Units

These remaining units do not provide any additional seasonal indicators to those mentioned in the previous units. Table 7.6 illustrates the season of availability for species identified for these remaining provenience units.

**Table 7.5. Months of availability of species identified in Inspector Island faunal assemblage, provenience unit S6E1/S7E1/S7E0 Level 5, based on modern natural history records.**

| | J F M A M J J A S O N D |
|---|---|
| **S6E1/S7E1/S7E0 Level 5** | |
| black bear | ---------------------------------------------------------------- |
| pine marten | ---------------------------------------------------------------- |
| cetacean | |
| Phocidae | ----------^^^^^^^^^^^^^^^^^^^^^^^^^^^^?------------------------ |
| harbour seal | ----------------------^^^^^^^^^^^^^^^^^?------------------------ |
| harp seal | - ———————— - |
| caribou | ---------------------------------------------------------------- |
| | |
| black guillemot■ | ----------------?N———N?-------------------------------------- |
| goose | ---------------------------------------------------------------- |
| cf. Canada goose | ?-----------------------------? |
| eider sp. | ---------------------------------------------------------------- |
| scoter sp. | ------------? ?------- |
| red-breasted merganser | ---------------------------------------------------------------- |
| | |
| rainbow smelt | -------------------————--? -------------------- |
| codfishes | ---------------------------------------------------------------- |
| Atlantic cod | ---------------------------------------------------------------- |
| sculpins | ----------------?———————————————?---------- |
| shorthorn sculpin | ---------------------------------------------------------------- |
| | |
| soft-shell clam○ | ----------------?t-----------------------------t?------------------ |

**Table 7.6. Months of availability of species identified in Inspector Island faunal assemblage, N3E3/N3E4/N4E2 Level 5 and remaining provenience units, based on modern natural history records.**

| | J F M A M J J A S O N D |
|---|---|
| **N3E3/N3E4/N4E2 Level 5** | |
| river otter | ------------------------------------------------------------------------ |
| Phocidae | -----------^^^^^^^^^^^^^^^^^^^^^^^^^^^?------------------------ |
| caribou | ------------------------------------------------------------------------ |
| Alcidae cf. murre or razorbill sp. | ------------------------------------------------------------------------ |
| **N3E7** | |
| harbour seal | ------------------------------------------------------------------------ |
| cervidae | ------------------------------------------------------------------------ |
| **S1E5 Level 3** | |
| beaver | ------------------------------------------------------------------------ |
| **S1E6 Level 5** | |
| red fox | ------------------------------------------------------------------------ |
| Phocidae | -----------^^^^^^^^^^^^^^^^^^^^^^^^^^^?------------------------ |
| harbour seal | ------------------------------------------------------------------------ |
| **S3W2 Level 5** | |
| harbour seal | ------------------------------------------------------------------------ |

### 7.2.4 Summary of Season of Availability of Species Identified in Inspector Island Faunal Assemblage

According to modern natural history information, the majority of species identified in the Inspector Island faunal assemblage are available year round in the region of the site. However, upon examination of Tables 7.4 to 7.6, there is an indication of a clustering or overlapping of species most likely to be available in the late-winter to early summer period, roughly late-February to the end of June.

The juvenile harbour seal remains in unit S6E1/L5, are direct evidence for exploitation sometime between the months of May and July. Some of the juvenile seal remains which could only be identified to harp/harbour were from newborn individuals. Newborn harp seals would have been available from the end of February to mid-March. Newborn harbour seals would have been available in May and June.

Immature and mature harp seals, would have been available while they were whelping, breeding and moulting on the offshore ice. This roughly encompasses a period from late February until the end of April or beginning of May. However, availability of harp seals of all ages would have been dependent upon favourable weather conditions which would allow for the formation of the ice pans for the seals use and which would provide for winds and currents that would move the ice to the southwest towards the northeast coast of Newfoundland (Chafe, 1923).

While available in the area throughout the year, rainbow smelt would have been found in concentration during their two week spawning period in May.

To summarise, while the Inspector Island faunal material is represented by species that could have been exploited throughout the year, there is definite evidence of faunal exploitation during a more specific period of time from late February until July.

## 7.3 Habitats Represented in the Inspector Island Faunal Assemblage

Table 7.7 summarises habitat information as indicated by the species present in the Inspector Island faunal assemblage. The table is divided into two major areas, the Newfoundland interior and the Newfoundland coast. These two major areas are each subdivided into several habitats. The interior is divided into barrens, forest and freshwater habitats. The barrens consist of vast open areas, characterised by rocky ground supporting a groundcover of dwarf shrubs and lichens interspersed with boggy areas (Montevecchi and Tuck 1983). The interior forest consists mainly of coniferous species such as balsam fir, black and white spruce. White pine was also a significant forest species prior to the 20th century. Small hardwood stands can be found along the waterways of central Newfoundland. The freshwater habitat refers to the freshwater lakes (ponds), rivers and streams which cross the island interior, passing through barrens and forest areas.

The coastal area is divided into forest, river, coastal island, inshore marine and offshore marine habitats. Coastal forests lie adjacent to beaches and cliffs running along the ocean shore. The coastal river habitat refers to the rivers which flow directly into the ocean, including their banks, extending as far inland as the tide reaches. The islands lie in the ocean waters of Notre Dame Bay and include both the protected inshore islands and outer coastal islands that are exposed to the open ocean. The inshore coastal habitat refers to the ocean water which begins at the high tide mark of the shore and extends as far as it is protected from the open ocean by intervening islands or by the moderating influence of horizontally deep bays, harbours or inlets in which it lays. Inspector Island lies within the inshore coastal habitat. The offshore marine habitat refers to the ocean waters that are part of the open ocean, unprotected by coastal islands or deep bays.

In general, the Inspector Island assemblage contains indicators from all the major Newfoundland habitats. However, the marine environment, particularly the inshore marine environment, Schwarz's inner coastal zone, appears to be where the habitats of almost all the identified species overlap.

It is possible the rainbow smelt remains represent the site's most specific habitat indicators. Today local residents report that Indian Brook at the Boyd's Cove site is the only known source of smelt in eastern Notre Dame Bay (Pastore 1997: personal communication). This modern distribution information suggests the inhabitants of the Inspector Island site may have been familiar with the Boyd's Cove site.

Those terrestrial species not obviously associated with a marine habitat are available in the coastal forests of Newfoundland and by way of the navigable rivers that flow from the Newfoundland interior and empty directly into the inshore marine environment. The only other exception to the inshore pattern is the habitat of the harp seals. Harp seals are definitely offshore, or outer coastal zone, dwellers. Harp seals migrate southwards past the outer coastal zone of Newfoundland's northeast coast in December, and continue on down the eastern side of Newfoundland to the Grand Banks. The harp seals arrive again in late February while on their northward migration. At this time the seals stay until the end of April on the ice off the northern coast. Large pans of sea ice drifting south from the arctic are met by the seals 20 to 50 miles east of Belle Isle (Chafe 1923). This area where the seals congregate on the ice is referred to as "The Front". As the ice drifts southwards the seals whelp, moult and mate on or near the ice edge. According to Chafe (1923) the winds and currents may bring the ice to within 30 miles off Fogo Island or the Funk islands and sometimes the ice is pushed right into the Notre Dame and Bonavista Bays. At the end of April the harp seals continue their northward migration up past the Labrador coast, following the receding pack ice (Bowan 1985; Ronald and Dougan 1982). Figure 7.5 provides an illustration of the harp seals migration routes. The harp seal population divides during the southward migration. A smaller group, the Gulf herd, splits off at the Strait of Belle Isle off Newfoundland's Northern Peninsula, and proceeds into the Gulf of St. Lawrence. The Gulf herd eventually whelps, moults and mates on ice near the Magdalen Islands. The two seal populations meet in late spring on the northward migration to waters off Baffin Island, Greenland or in Hudson Bay.

## 7.4 Evidence of Alteration to the Inspector Island Faunal Material

The term "alteration" is used to describe those faunal fragments which had been clearly changed, most likely by human activity, in addition to the breakage and crushing related to general disposal activities and post-depositional forces. In general, alterations did not appear to have had a significant affect on the degree of preservation of the entire Inspector Island faunal assemblage. Breakage and organic decomposition were the main reasons the faunal material was unidentifiable. The Inspector Island assemblage contained specimens which had been cut or sheared, worn smooth, and most commonly, exposed to heat. About 9% of the entire identified assemblage exhibited some form of alteration. All of these specimens were recovered from the following three analytical units; S6E0/L3, S6E1/L5 and N3E3/L5. Table 7.8 provides a summary of those identified specimens exhibiting alteration, sorted by species and form of alteration.

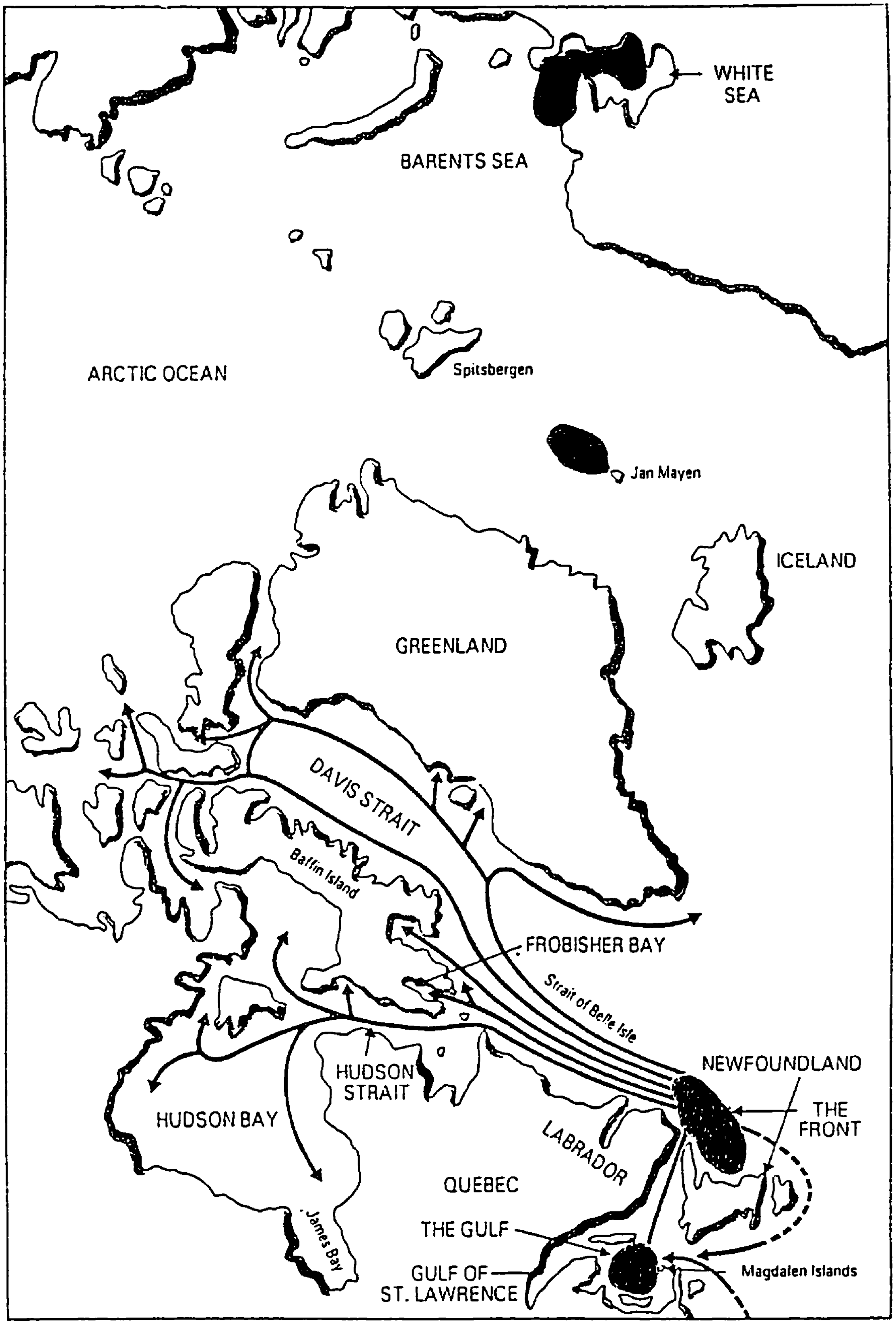



**Figure 7.5. Breeding and moulting area and principal migration routes of the harp seal population (from Comeau, 1989:2).**

**Table 7.7. Habitats occupied by species identified in the Inspector Island faunal assemblage based on modern natural history records.**

| S6E0/L3 | INTERIOR | | | COAST | | | | |
|---|---|---|---|---|---|---|---|---|
| Taxon | Barrens | Forest | Freshwater | Forest | River | Island | Inshore | Offshore |
| black bear° | X | X | S | X | S | | | |
| harbour seal | | | X | | X | | X | |
| harp seal♦ | | | | | | | | X wh |
| caribou | X | X | | X | | | | |
| black guillemot | | | | X | | X | X | X |
| cf.Canada goose• | / | / | X | | X | | X | |
| rainbow smelt | | | X | | X | | X | |
| codfishes | | | | | | | X | X |
| sculpins | | | | | | | X | X |
| shorthorn sculpin | | | | | | | X | |
| longhorn sculpin | | | | | | | X | X |
| soft-shell clam | | | | | X | | X | |

**Table 7.7, continued. Habitats occupied by species identified in the Inspector Island faunal assemblage based on modern natural history records.**

| S6E1/L5 | Interior | | | Coast | | | | |
|---|---|---|---|---|---|---|---|---|
| Taxon | Barrens | Forest | Freshwater | Forest | River | Island | Inshore | Offshore |
| black bear | X | X | S | X | S | | | |
| pine marten | | X | | X | | | | |
| cetacean | | | | | | | X | X |
| harbour seal | | | X | | X | | X | |
| harp seal | | | | | | | | X wh |
| caribou | X | X | | X | | | | |
| black guillemot | | | | X | | X | X | X |
| cf.Canada goose* | / | / | X | | X | | X | |
| eider sp. | | | / | | X | X | X | / |
| scoter sp. | | | X | | X | X | X | / |
| red-breasted merganser** | | | B | | B | | W | |
| rainbow smelt | | | X | | X | | X | |

**Table 7.7, continued. Habitats occupied by species identified in the Inspector Island faunal assemblage based on modern natural history records.**

| S6E1/L5 | INTERIOR | | | COAST | | | | |
|---|---|---|---|---|---|---|---|---|
| Taxon | Barrens | Forest | Freshwater | Forest | River | Island | Inshore | Offshore |
| codfishes | | | | | | | X | X |
| Atlantic cod | | | | | | | X | X |
| sculpins | | | | | | | X | X |
| shorthorn sculpin | | | | | | | X | |
| soft-shell clam | | | | | X | | X | |

| N3E3/L5 | INTERIOR | | | COAST | | | | |
|---|---|---|---|---|---|---|---|---|
| Taxon | Barrens | Forest | Freshwater | Forest | River | Island | Inshore | Offshore |
| river otter | | X | X | X | X | | | |
| Phocidae | | | | | X | | X | X |
| caribou | X | X | | X | | | | |

**Table 7.7, continued. Habitats occupied by species identified in the Inspector Island faunal assemblage based on modern natural history records.**

| N3E7<br>Taxon | INTERIOR | | | COAST | | | | |
|---|---|---|---|---|---|---|---|---|
| | Barrens | Forest | Freshwater | Forest | River | Island | Inshore | Offshore |
| harbour seal | | | X | | X | | X | |
| cervidae | X | X | | X | | | | |

| S1E5 Level 3<br>Taxon | INTERIOR | | | COAST | | | | |
|---|---|---|---|---|---|---|---|---|
| | Barrens | Forest | Freshwater | Forest | River | Island | Inshore | Offshore |
| beaver | X | X | X | X | X | | | |

| S1E6 Level 5<br>Taxon | INTERIOR | | | COAST | | | | |
|---|---|---|---|---|---|---|---|---|
| | Barrens | Forest | Freshwater | Forest | River | Island | Inshore | Offshore |
| red fox♦ | wh | X | | X | | | | |
| Phocidae | | | X | | X | | X | X |
| harbour seal | | | X | | X | | X | |

**Table 7.7, continued. Habitats occupied by species identified in the Inspector Island faunal assemblage based on modern natural history records.**

| <u>S3W2 Level 5</u> | INTERIOR | | | COAST | | | | |
|---|---|---|---|---|---|---|---|---|
| **Taxon** | **Barrens** | **Forest** | **Freshwater** | **Forest** | **River** | **Island** | **Inshore** | **Offshore** |
| harbour seal | | | X | | X | | X | |

° "S" indicates salmon season.

• "/" indicates occasional resident.

• "B" indicates species breeds in this habitat.

• "W" indicates species is a winter resident in this habitat.

♦ "wh" indicates species whelps in this habitat, however, unit did not contain juvenile elements for these species.

Heat exposure was the most commonly occurring form of alteration, affecting 8% of the entire identified sample (89% of the altered specimens). Heat exposed material appeared in two forms, charred and calcined. Calcined bone appears white or blue and is usually shrunken, cracked and warped. Calcined bone has been exposed to higher temperatures and longer periods of heat exposure than charred bone has. Although it is possible for specimens to exhibit both charring and calcination no such examples were recorded for the identified assemblage. It was determined that the heat exposed material was burned somewhere other than in the excavated units because the burned material was mixed in with material that was never exposed to heat and it was not accompanied by heat exposed rock or soil. Rainbow smelt elements comprised 76% of all the identifiable heat exposed material (NISP = 50). Beaver, Phocidae, caribou, black guillemot and sculpin elements also exhibited heat exposure.

Only two identified bone fragments exhibited cut marks. A single merganser scapula exhibited four fine, parallel cut marks across its medial border. A juvenile Phocidae sternebra exhibited a deep horizontal cut across its ventral surface. A third fragment, a piece of cetacean (whale or dolphin) skull, had clearly been sheared or chopped off the rest of the skull on an oblique angle.

**Table 7.8 Summary of identified specimens from the Inspector Island site exhibiting some form of alteration.**

| TAXON | ALTERATION | | | | | | |
|---|---|---|---|---|---|---|---|
| | Calcined | Charred | Cut | Sheared | Worn | Trowel Trauma | Total |
| beaver | 4 | 1 | | | | | 5 |
| cetacean | | | | 1 | | | 1 |
| harbour seal | | | | | | 1 | 1 |
| Phocidae | 4 | 3 | 1 | | | 3 | 11 |
| caribou | 1 | | | | | | 1 |
| black guillemot | 1 | | | | 1 | | 2 |
| red-breasted merganser | | | 1 | | | | 1 |
| rainbow smelt | 35 | 15 | | | | | 50 |
| sculpin | 2 | _ | _ | _ | _ | _ | 2 |
| | 47 | 19 | 2 | 1 | 1 | 4 | 74 |

Only one black guillemot long bone shaft exhibited evidence of wear or polishing. The wear had produced a hole which extended into the hollow shaft. Finally, only four identified specimens exhibited trowel trauma resulting from the modern excavation process.

## 7.5 Summary Description of Inspector Island Identified Faunal Sample

Chapter 7 presented a discussion of the evidence for body region patterning, season of availability and habitat representation as found in the identified faunal sample from Inspector Island. This chapter also looked at evidence of alteration of the identified faunal material.

Body region analysis focused on the three most numerous taxonomic categories, seal, rainbow smelt and sculpins, as represented in the two largest analytical units, S6E0/L3 and S6E1/L5. Examination of the seal material indicated that all body regions of juvenile seals were present in the sample while basically only the head and "hands" and "feet" of the adult seals were present. The suggestion was that the Inspector Island units contained evidence of complete processing of baby seals and initial processing of the bulky adult seals. Further processing of adult seals could have occurred elsewhere on Inspector Island or further afield.

The next most numerous taxonomic groups, rainbow smelt and sculpin appeared to be represented in all body regions, suggesting that the excavated units represented the processing of whole specimens. However, the sieved unit

S6E0/L3 did show a high ratio of smelt vertebrae to head elements (280:2) suggesting that smelt heads were discarded elsewhere as part of the processing of this species. In light of the modern distribution information for rainbow smelt, it is possible that the smelt were caught and processed at the Boyd's Cove site and then used at the Inspector Island site.

Modern natural history records indicate that the majority of species identified in the Inspector Island faunal assemblage were species available throughout the year in the region of Inspector Island. However, closer examination of the data indicated that there was a clustering of species (and clustering of the volume of resources they represented), most likely to be available in the late-winter to early summer period, roughly late February to June. This clustering around the period when these species would "most-likely" have been available was further supported by the direct evidence for the exploitation of juvenile harbour seals, newborn harbour or harp seals and of harp seals of all age categories.

Juvenile harbour seals would have been available from May onwards through the summer. By the end of the summer, the bones of juvenile harbour seals would no longer exhibit 100% coverage in juvenile cortex, the diagnostic factor in determining the osteological age of this seal material. Newborn harp seals would have been available, roughly, from late February until mid to late March when they would have outgrown their osteologically newborn appearance. Since harbour seals are known to whelp in May and June, newborn harbour seal material would indicate a time of death sometime during the period from May until the beginning of July. Immature and mature harp seals could have been exploited during their southward migration past Notre Dame Bay in December but it is considered much more likely that they were taken during their extended period of whelping, breeding and moulting, from late February until the end of April or early May when the offshore ice conditions permitted. During optimal conditions, the pack ice could simply be walked on to from the shores of Notre Dame Bay and its islands, out several kilometres to the ice edge.

As would be expected, the Inspector Island faunal material exhibited a strong orientation towards the exploitation of the marine habitat. Both inner and outer coastal zones were represented. While some of the identified species could have been found in the Newfoundland interior, all of these species could also be found in the forests and on the windswept rocks adjacent to the ocean or on the banks of rivers flowing into the ocean in Notre Dame Bay.

Only 9% of the identified Inspector Island material had been altered. Heat exposure was by far the most commonly occurring form of alteration, comprising 89% of the altered identified material. Most of the heat exposed remains were from rainbow smelt although beaver, seal, caribou, black guillemot and sculpin fragments were also subjected to heat. Only three fragments exhibited cut marks, one seal, one red-breasted merganser and a cetacean skull element. One black guillemot long bone had a hole polished through its surface.

Overall, the two major analytical units, S6E1/L5 and S6E0/L3 exhibit similar patterns in their faunal samples. The two units exhibit a similar list of identified species, pattern of seal body parts present, indicators for season of exploitation and habitats exploited. The fact that S6E1/L5 represents an earlier period of occupation than S6E0/L3 suggests that the Little Passage occupants of this site practised basically the same mode of subsistence over some period of time.

# CHAPTER 8

## The Beaches

## Results of Analysis: Identification and Quantification

The following is a summary of the first level of analysis of the faunal assemblage from The Beaches site. This first level of analysis includes the identification and quantification of the faunal material. Further analysis of the raw data in terms of distribution of skeletal elements per body regions per species, the habitats represented and the season of availability of the identified species, will follow in Chapter 9.

### 8.1 The Beaches (DeAk-1)

As described in Chapter 4, the Beaches faunal material came from three provenience units: two (N33.58W24.42 and N34.50W24.00) from a large midden feature (Feature 4) and one from a test pit of a separate, smaller midden feature (Test Pit 11). As also discussed in Chapter 4, the relationship of the three units was unknown and consequently some of the analysis will require that they be treated as separate entities. Table 8.1 summarises the contribution of each unit to the total collection of Little Passage faunal material gathered from the Beaches site.

**Table 8.1. Distribution, per analytical unit, of the total Beaches site faunal sample.**

| Unit | # of Unident. Fragments | % of Total Fragments per Unit | # of Ident. Fragments (NISP) | % of Total Fragments per Unit | Total # of Fragments per Unit |
|---|---|---|---|---|---|
| N33.58W24.42 | 212 | 60.23 | 140 | 39.77 | 352 |
| N34.50W24.00 | 508 | 85.52 | 86 | 14.48 | 594 |
| Test Pit 11 | 27 | 67.50 | 13 | 32.50 | 40 |
| Combined Site Total | 747 | 75.76 | 239 | 24.24 | 986 |

Table 8.2 summarises the contribution (number of fragments) of the various taxonomic classes to the total faunal sample. Material representing the Class Pelecypoda was also present within these provenience units but was not collected in a fashion which could be quantified.

Mammalian fragments comprised the majority of the entire sample contributing 75.96% of the faunal material. Avian remains comprised 21.10% of the assemblage while fish and Class Unknown fragments made up the remaining 1.12% and 1.83% respectively. The small proportion of fish material was not considered to be a result of the recovery techniques. Several buckets of soil were screened with 1mm geological sieves and produced only one tiny fish element. Bone material from all classes appeared to be in good condition and suggested that

**Table 8.2. Total Beaches faunal assemblage, representation by taxonomic class, expressed as number of fragments per unit and percentage of all fragments recovered per unit.***

| Unit | Mammal | | Bird | | Fish | | Unknown | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | # of Frag's | % of Frag's. | # of Frag's | % of Frag's | # of Frag's | % of Frag's | # of Frag's | % of Frag's | # of Frag's |
| N33.58W24.42 | 262 | 74.43 | 88 | 25.00 | 0 | 0.00 | 2 | 0.57 | 352 |
| N34.50W24.00 | 456 | 76.77 | 117 | 19.70 | 11 | 1.85 | 10 | 1.68 | 594 |
| Test Pit 11 | 31 | 77.50 | 3 | 7.50 | 0 | 0.00 | 6 | 15.00 | 40 |
| Combined Site Total | 749 | 75.96 | 208 | 21.10 | 11 | 1.12 | 18 | 1.83 | 986 |

* Members of the Class Pelecypoda were present in N33.58W24.42 but not available for quantification. A representative sample of shell was collected in order to identify the species.

preservation conditions were not a factor in the lack of fish remains. In fact, the two identifiable fish elements recovered were in a very good state of preservation. It was not considered likely that fish remains decomposed in the excavated portion of the midden feature.

## 8.2 Discussion of Species Identified in The Beaches Faunal Sample

Tables 8.3 through 8.6 list all the species identified at the Beaches site in their taxonomic order and provide their common and scientific names. Many identifications were to taxonomic levels greater than species, as was the case for the Inspector Island faunal assemblage. Many of these larger taxonomic categories were defined in Chapter 6, section 6.2. The following subsections describe some taxonomic categories not found in the Inspector Island assemblage. These subsections are organized by Class, i.e. mammal, bird, and fish.

### 8.2.1 Mammals

Six mammal species were identified in the Beaches faunal sample (see Table 8.3 for summary). Identified species included beaver, pine marten, Canadian otter and caribou, which make up four of the fourteen native terrestrial Newfoundland mammal species. In addition, a single element identified to cf. *Canis* sp. was believed to be from a wolf. Absent native terrestrial mammal species were the little brown and eastern long-eared bats, Arctic hare, meadow mouse, muskrat, red

**Table 8.3. Mammalian species identified in the Beaches faunal assemblage.**

| Scientific Name | Common Name |
|---|---|
| ORDER CARNIVORA | |
| Family Mustelidae | |
| SUBFAMILY MUSTELINAE | |
| *Martes americana* (Turton, 1806) | pine marten |
| SUBFAMILY LUTRINAE | |
| *Lutra canadensis* (Schreber, 1776) | Canadian otter |
| Family Phocidae | |
| SUBFAMILY PHOCINAE | |
| *Phoca groenlandica* Erxleben, 1777 | harp seal |
| *Phoca vitulina* Linnaeus, 1758 | harbour seal |
| ORDER ARTIODACTYLA | |
| Family Cervidae | |
| *Rangifer tarandus* (Linnaeus, 1758) | caribou |
| ORDER RODENTIA | |
| Family Castoridae | |
| *Castor canadensis* Kuhl, 1820 | American beaver |

fox, ermine, black bear and lynx. The two other mammal species identified were the marine species harp and harbour seals. Many of the species identified were represented by only one or two fragments, heightening the usual question regarding sample representativeness. The many native species not identified within the sample may also exist on the site in similarly sparse quantities.

*Canis* sp.

The term *Canis* sp. refers to the species that fall within the Genus *Canis*. This Genus is comprised of the species wolf, coyote and domestic dog. The *Canis* sp. element in the Beaches sample was a second mandibular incisor from either a wolf or a large dog. The incisors from these two species are not morphologically distinct. However, dog teeth are generally smaller than wolf teeth and this specimen matched the size of wolf specimens available in the reference collection. Furthermore, as will be expanded upon in the next chapter, a wolf identification was considered the most likely because there was no evidence to suggest that dogs were present at the site.

The wolf population on the island of Newfoundland has been extinct since about 1913 (Cameron 1958:72). Newfoundland's indigenous wolf, officially referred to as the Newfoundland wolf, was considered to be a subspecies unique to the island.

### 8.2.2 Birds

Three bird species, double-crested cormorant, Canada goose, and common raven, were positively identified. All levels of identification for this class include species currently living in the area around the Beaches site. Similar to the Inspector Island site, the number of bird species identified represents a small fraction of the potential variety of bird species presently available in the region.

Cormorant sp.

There are two cormorant species, great and double-crested, present in Newfoundland. The great cormorant is a breeding resident of the island while the double-crested cormorant is considered a breeding migrant to the island. While some fragments could be identified without doubt to be from a double-crested cormorant, there was some material which could only be identified as cormorant species. Since great cormorants are available year round in Newfoundland, it is considered equally likely that this cormorant material could be from either species.

*Branta* sp.

Three species of the Genus *Branta*, have been observed in Newfoundland. These species are Canada, Brant and barnacle goose. Those faunal elements identified as *Branta* sp. could not be more precisely identified than to the group containing these three species. However, Canada goose remains were positively

**Table 8.4. Bird species identified in the Beaches faunal assemblage.**

| Scientific Name | Common Name |
|---|---|
| ORDER PELECANIFORMES | |
| Family Phalacrocoracidae | |
| *Phalacrocorax auritas* (Lesson) | double-crested cormorant |
| ORDER ANSERIFORMES | |
| Family Anatidae | |
| SUBFAMILY ANSERINAE | |
| Tribe Anserini | |
| *Branta canadensis* (Linnaeus) | Canada goose |
| ORDER PASSERIFORMES | |
| Family Corvidae | |
| *Corvus corax* Linnaeus | common raven |

identified within this assemblage. Canada goose is known to be a regular, breeding migrant to Newfoundland and occasionally groups of Canada geese have been found in the Bonavista Bay area during the winter months (Burrows 1989). The Brant and barnacle goose are only considered vagrants to the island which visit on an "erratic" basis when they stray from their usual ranges (Montevecchi and Tuck 1986). Therefore, it is considered most likely that the *Branta* sp. elements were from Canada goose.

Eider sp.

Some bird fragments were identified to the Genus *Somateria* which contains all the eider species. Two eider species are known to live in Newfoundland in the Bonavista Bay area, common and King eider. Common eider is a breeding resident of Newfoundland which can be found in large numbers certain times of the year, while King eider is an uncommon winter resident (Montevecchi and Tuck 1987;Vickery 1983).

*Larus* sp.

The Genus *Larus* is made up of the gull species. Herring and great black-backed gulls are breeding residents of Newfoundland. Iceland and glaucous gulls are winter residents of Newfoundland. Ring-billed and common black-headed gull are breeding migrants to the island. Less commonly occurring is Bonaparte's gull, considered a migrant, and laughing, Franklin's, little, mew and Thayer's gulls which are considered erratic visitors to the island.

The size and morphology of the *Larus* specimens found in the Beaches faunal assemblage most closely match the herring, great black-backed and ring-billed reference material, although one specimen did appear to be from a smaller gull species.

### 8.2.3 Fish

Atlantic cod was the only fish species positively identified within the Beaches faunal assemblage. One fish bone fragment was identified as cf. longhorn sculpin. As was the case for bird representation at the site, the Beaches identified sample contained a tiny portion of the fish species potentially available.

**Table 8.5. Fish species identified in the Beaches faunal assemblage.**

| Scientific Name | Common Name |
|---|---|
| ORDER GADIFORMES | |
| Suborder Gadoidei | |
| Family Gadidae | |
| SUBFAMILY GADINAE | |
| *Gadus morhua* Linnaeus, 1758 | Atlantic cod |
| ORDER SCORPAENIFORMES | |
| Suborder Cottoidei | |
| Family Cottidae | |
| *Myoxocephalus octodecemspinosus* (Mitchill, 1814) | longhorn sculpin |

**Table 8.6. Shellfish species identified in the Beaches faunal assemblage.**

| Scientific Name | Common Name |
|---|---|
| ORDER MYOIDA | |
| Family Myidae | |
| *Mya arenaria* Linnaeus, 1758 | soft-shell clam |

## 8.3 Quantification of the Beaches Identified Sample

Table 8.7 summarises the actual (NISP) and relative (%NISP) abundance of species per analytical unit for the three excavated units. Figure 8.1 provides a visual comparison of the raw Number of Identified Specimens (NISP) values for these units. Table 8.8 summarises, per analytical unit, the Minimum Number of Individuals (MNI) data and distribution of NISP with regard to osteological age. In general, the MNI analysis helped to highlight just how small the Beaches faunal sample was. Table 8.9 summarises Relative Frequency (RF) calculations for the site. Due to the small sample size, Relative Frequency calculations were merely an exercise. Figures 8.8 and 8.9 illustrate the %RF values for mammal and bird identifications.

**Table 8.7. Frequency of species identified in the Beaches assemblage, N33.58W24.42 and N34.50W24.00, calculated as NISP and %NISP.**

| Taxon | N33.58W24.42 | | N34.50W24.00 | |
|---|---|---|---|---|
| | NISP | %NISP | NISP | %NISP |
| beaver | 2 | 1.43 | | |
| pine marten | 3 | 2.14 | 1 | 1.16 |
| river otter | | | 5 | 5.81 |
| *Canis* sp. | 1 | 0.71 | | |
| Phocidae | 91 | 65.00 | 27 | 31.40 |
| *Phoca* sp. | 3 | 2.14 | 7 | 8.14 |
| cf. harbour seal | 1 | 0.71 | 5 | 5.81 |
| harbour seal | | | 4 | 4.65 |
| cf. harp seal | | | 1 | 1.16 |
| harp seal | 1 | 0.71 | 5 | 5.81 |
| caribou | 6 | 4.29 | 5 | 5.81 |
| | | | | |
| cormorant sp. | | | 4 | 4.65 |
| cf. d-c cormorant | | | 4 | 4.65 |
| double-crested cormorant | 2 | 1.43 | | |
| goose | | | 2 | 2.33 |
| goose, large | 7 | 5.00 | | |
| *Branta* sp. | 1 | 0.71 | | |
| cf. Canada goose | | | 8 | 9.30 |
| Canada goose | 5 | 3.57 | | |
| duck | 5 | 3.57 | | |

| Taxon | N33.58W24.42 | | N34.50W24.00 | |
|---|---|---|---|---|
| | NISP | %NISP | NISP | %NISP |
| duck, large | 2 | 1.43 | | |
| sea duck cf. eider/scoter | 1 | 0.71 | 2 | 2.33 |
| cf. eider sp. | 1 | 0.71 | | |
| eider sp. | 5 | 3.57 | 4 | 4.65 |
| gull sp. | 1 | 0.71 | | |
| gull, small | 1 | 0.71 | | |
| raven | 1 | 0.71 | | |
| Atlantic cod | | | 1 | 1.16 |
| cf. longhorn sculpin | | | 1 | 1.16 |
| Unit Totals | 140 | 99.96 | 86 | 99.98 |

| Taxon | Test Pit 11 | |
|---|---|---|
| | NISP | %NISP |
| Phocidae | 7 | 53.85 |
| Phocidae, large | 1 | 7.69 |
| harbour seal | 2 | 15.39 |
| harp seal | 3 | 23.08 |
| Unit Totals | 13 | 100.01 |

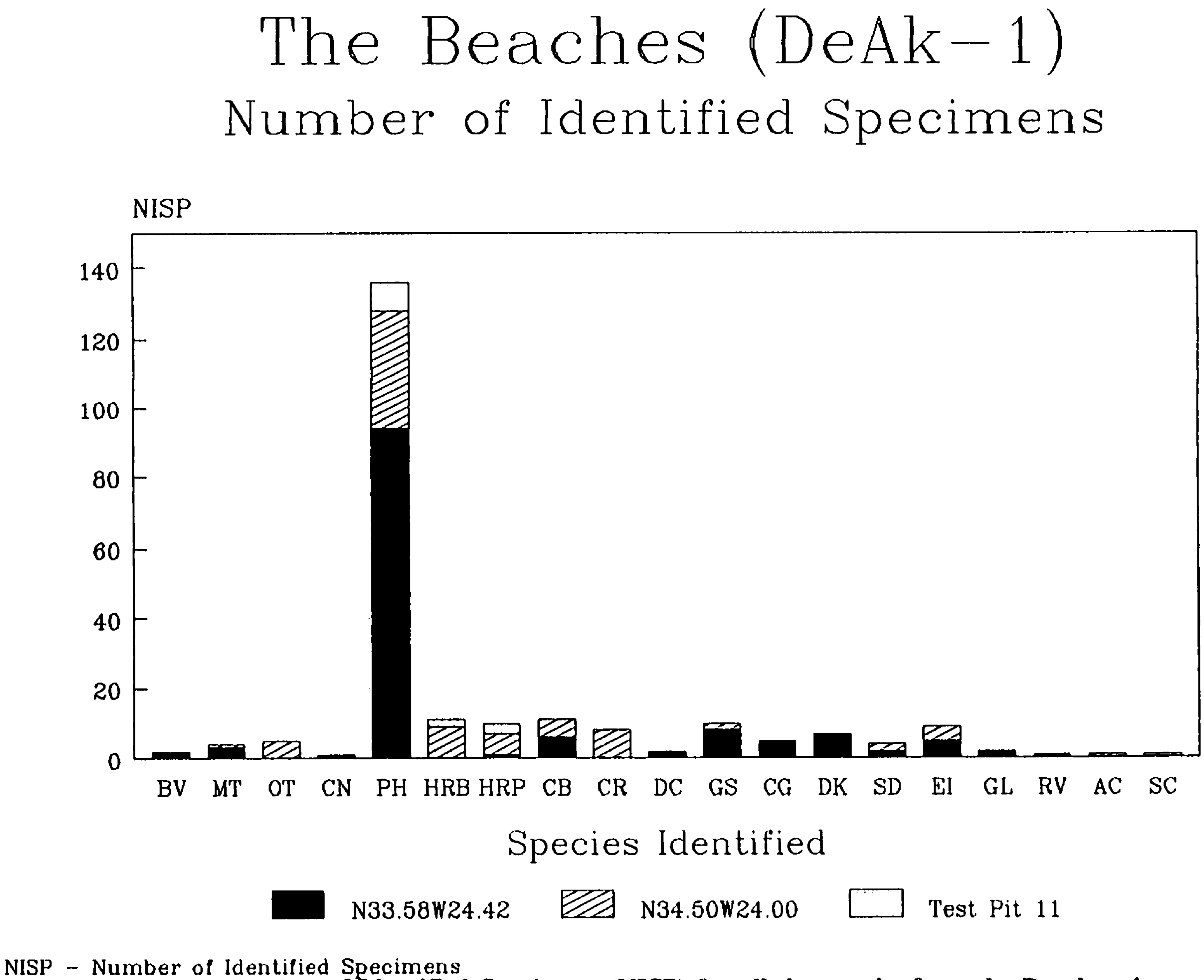



**Figure 8.1. Number of Identified Specimens (NISP) for all three units from the Beaches site.**

**Table 8.8. Minimum Number of Individuals (MNI) and NISP distribution by skeletal age for the Beaches site assemblage.**

| N33.58W24.42 | | | | |
|---|---|---|---|---|
| **Taxon** | **Age** | **NISP** | **MNI** | **Element** |
| Phocidae | J | 57 | 2 | humerus, femur, tibia |
| | I | 25 | (1)* | canine, vertebrae |
| | I+ | 8 | (1) | vertebrae, phalanges |
| | /A | 1 | (1) | canine |
| *Phoca* sp. | I | 1 | (1) | occipital |
| | I+ | 2 | (1) | occipital |
| cf. harbour seal | I | 1 | 1 | scapula |
| harp seal | I+ | 1 | 1 | ulna |
| beaver | I+ | 1 | (1) | incisor |
| | /A | 1 | 1 | metatarsal 3 |
| pine marten | I+ | 1 | (1) | vertebra, thoracic |
| | /A | 2 | 1 | humerus |
| *Canis* sp. | A | 1 | 1 | incisor 2, mandibular |
| caribou | I+ | 5 | (1) | humerus, tibia |
| | /A | 1 | 1 | incisor 3 |
| double-crested cormorant | I+ | 2 | 1 | vertebra, cervical |
| goose, large | I+ | 7 | (1) | furculum, sternum |
| *Branta* sp. | I+ | 1 | (1) | vertebra, thoracic |
| Canada goose | I+ | 5 | 2 | femur |
| duck sp. | I+ | 5 | (1) | ulna, carpometacarpus |
| duck sp., large | I+ | 2 | (1) | tarsometatarsus |
| sea duck | I+ | 1 | (1) | coracoid |

| N33.58W24.42 | | | | |
|---|---|---|---|---|
| **Taxon** | **Age** | **NISP** | **MNI** | **Element** |
| cf. eider sp. | $I^+$ | 1 | (1) | humerus |
| eider sp. | $I^+$ | 5 | 2 | humerus |
| gull sp. | $I^+$ | 1 | 1 | sternum |
| gull sp., small | $I^+$ | 1 | (1) | tibiotarsus |
| raven | $I^+$ | 1 | 1 | scapula |

* Those MNI values enclosed in brackets indicate the number of individuals detected in that particular taxon and age category, but that the value is not to be included in total MNI analysis because it is believed these individuals are probably already counted within a more specific taxonomic level. This situation occurred because the same skeletal element was not available to use for MNI calculations in all age categories within the same taxon. The calculation is further complicated by the fact that different skeletal elements within a single individual, age at varying rates.

| N34.50W24.00 | | | | |
|---|---|---|---|---|
| **Taxon** | **Age** | **NISP** | **MNI** | **Element** |
| Phocidae | J | 23 | 1 | femur |
| | I | 1 | (1) | temporal |
| | I+ | 2 | (1) | carpal 4, vertebra, cervical |
| | /A | 1 | (1) | canine |
| *Phoca* sp. | I | 2 | (1) | femur, scapula |
| | I+ | 5 | (1) | temporal, vertebra, thoracic |
| cf. harbour seal | I | 3 | 1 | molar, premolars |
| | A | 2 | (1) | premolars |
| harbour seal | I+ | 4 | 1 | temporal |
| cf. harp seal | I+ | 1 | (1) | temporal |
| harp seal | I | 1 | 1 | femur |
| | I+ | 4 | 1 | temporal |
| pine marten | I+ | 1 | 1 | vertebra, thoracic |
| river otter | I+ | 5 | 1 | t. calcaneus, t. astragalus |
| caribou | I+ | 5 | 1 | tibia |
| cormorant sp. | I+ | 4 | (1) | carpometacarpus |
| cf. d-c cormorant | I+ | 4 | 1 | tarsometatarsus |
| goose | I+ | 2 | (1) | humerus, vertebra, thoracic |
| cf. Canada goose | I+ | 8 | 1 | coracoid, vertebra |
| sea duck | I+ | 2 | (1) | scapula |
| eider sp. | I+ | 4 | 2 | coracoid |
| Atlantic cod | I+ | 1 | 1 | vertebra |
| cf. longhorn sculpin | I+ | 1 | 1 | hyomandibular |

| Test Pit 11 | | | | |
|---|---|---|---|---|
| **Taxon** | **Age** | **NISP** | **MNI** | **Element** |
| Phocidae | J | 7 | 1 | femur, ulna, scapula |
| Phocidae, large | I | 1 | 1 | scapula |
| harbour seal | I+ | 2 | 1 | temporal |
| harp seal | I+ | 3 | 1 | temporal |

### 8.3.1 Quantification of N33.58W24.42

Mammal remains dominated the N33.58W24.42 identified sample, comprising 77.14% of the identified fragments. Fragments of bird bone contributed the remaining 22.86% of the identified sample. Figure 8.2 uses %NISP values to illustrate the relative contribution of these two classes and provides a detailed breakdown of the seal component.

#### Seal

Not only did seal elements dominate the mammal component of this unit, but also the entire identified sample, contributing 68.56% of the entire identified N33.58W24.42 assemblage. Sixty-five percent of the identified sample could only be identified to the taxonomic family Phocidae (F. Phocidae). *Phoca* sp. fragments contributed 2.14% to the identified sample. Only one fragment could be identified as a harp seal element. One fragment was identified with 95% confidence to harbour seal. It is considered most likely that the Phocidae and

*Phoca* sp. material came from harp and harbour seals since these two species were the only seals identified in the entire Beaches faunal assemblage.

Figure 8.3 illustrates the distribution of seal %NISP sorted by age. A very large proportion of the seal material came from juvenile (59.38% of the seal fragments) and immature (26.04% of seal fragments) seals. As discussed in Chapter 6, section 6.3.1, few juvenile seal elements can be used to identify to species. No diagnostic juvenile elements were available in this unit. This age distribution helps to explain why such a large proportion of the seal material could only be identified to Phocidae. Further discussion of skeletal age and patterning of body regions is presented later in Chapter 9.

As was the case for the Inspector Island assemblage, MNI values temper the apparent dominance of juvenile seal in the sample (see Table 8.8). MNI analysis indicates the presence of at least four seal individuals in this unit: two juvenile Phocidae, one Immature$^{+}$ harp and one immature individual which is probably a harbour seal.

**Remaining Taxonomic Categories in N33.50W24.42**

The remaining 8.57% of the total identified mammal sample represented four additional species: beaver, pine marten, caribou and cf. wolf. Each species appeared to be represented by a single adult sized individual.

The bird portion of the identified sample was represented by at least five species which included double-crested cormorant, Canada goose, common raven, some type of eider duck, and perhaps two types of gulls. MNI analysis revealed the presence of at least two Canada geese and two eider duck individuals. The other bird taxa were represented by single individuals.

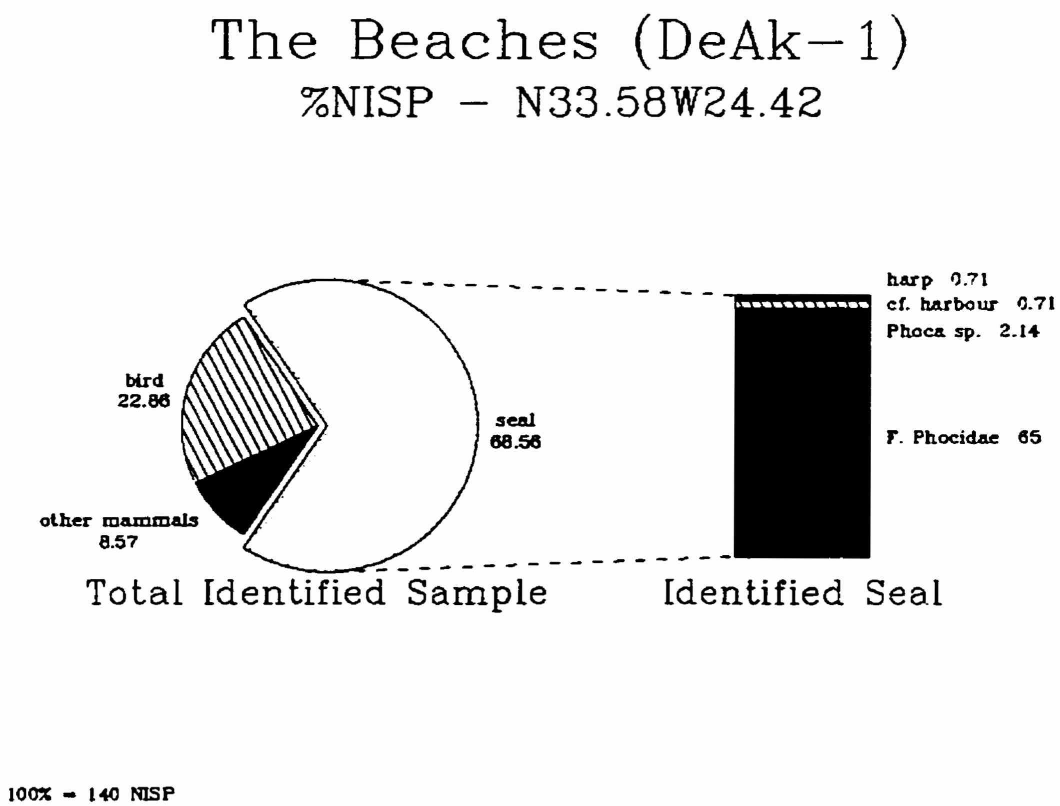



**Figure 8.2. Percentage Number of Identified Specimens (%NISP) from the Beaches unit N33.58W24.42 illustrating the contribution of the various levels of identification within the seal family.**

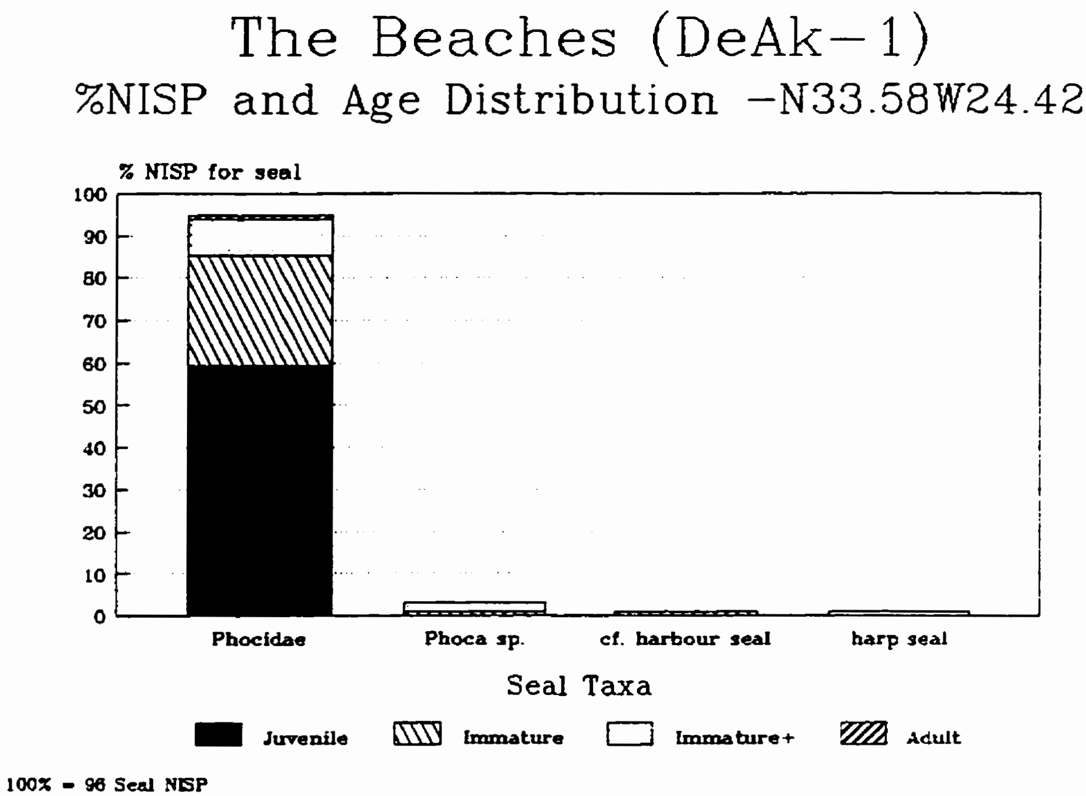



**Figure 8.3. Distribution of seal elements by age, expressed as a percentage of total identified seal specimens from the Beaches unit N33.58W24.42.**

**Table 8.9. Relative Frequency (RF) and Percentage Relative Frequency calculated per unit and taxonomic Class, for the Beaches site assemblage.**

| Mammals | | | | |
|---|---|---|---|---|
| | N33.58W24.42 | | N34.50W24.00 | |
| Taxon | RF | %RF | RF | %RF |
| beaver | 0.38 | 9.18 | | |
| *Canis* sp. | 0.17 | 4.12 | | |
| marten | 0.50 | 12.08 | | |
| otter | | | 0.50 | 12.63 |
| Phocidae | 0.71 | 17.15 | 0.31 | 7.83 |
| *Phoca* sp. | 1.00 | 24.15 | 0.50 | 12.63 |
| cf. harbour | 0.50 | 12.08 | 0.25 | 6.31 |
| harbour seal | | | 1.00 | 25..25 |
| cf. harp seal | | | 0.50 | 12.63 |
| harp seal | 0.50 | 12.08 | 0.75 | 18.94 |
| caribou | 0.38 | 9.18 | 0.15 | 3.79 |
| | | | | |
| | 4.14 | 100.02 | 3.96 | 100.01 |

| Birds | | | | | | |
|---|---|---|---|---|---|---|
| | N33.58W24.42 | | N34.50W24.00 | | | |
| **Taxon** | **RF** | **%RF** | **RF** | **%RF** | **RF** | **%RF** |
| cormorant | | | 0.50 | 13.33 | | |
| cf. d-c cormorant | | | 0.25 | 6.67 | | |
| goose sp. | 1.00 | 20.00 | 0.50 | 13.33 | | |
| cf. Canada goose | | | 1.00 | 26.67 | | |
| Canada goose | 0.75 | 15.00 | | | | |
| duck | 0.50 | 10.00 | | | | |
| eider/scoter | 0.50 | 10.00 | 0.50 | 13.33 | | |
| cf. eider | 0.50 | 10.00 | | | | |
| eider sp. | 0.50 | 10.00 | 1.00 | 26.67 | | |
| gull sp. | 0.75 | 15.00 | | | | |
| common raven | 0.50 | 10.00 | ___ | ___ | | |
| | | | | | | |
| | 5.00 | 100.00 | 3.75 | 100.00 | | |

**8.3.2 Quantification of N34.50W24.00**

As summarised in Table 8.7, mammal, bird and fish remains contributed 69.76%, 27.91% and 2.33% respectively to the unit's identified sample. Figure 8.4 uses %NISP values to illustrate the relative contribution of the various taxonomic classes to the unit's identified sample and, in particular, details the contribution of the seal portion of this sample.

**Seal**

As Figure 8.4 illustrates, seal fragments made up 56.98% of the unit's entire identified sample. Compared to N33.58W24.42, this unit had a smaller proportion of elements identified as Phocidae (31.40% of identified sample). An additional 8.14% were identified as *Phoca* sp. Harbour seal and cf. harbour seal contributed 4.65% and 5.81% to the identified sample respectively, while harp and cf. harp seal fragments contributed 5.81% and 1.16%. Again, as in the previous unit, it is considered most likely that the Phocidae and *Phoca* sp. elements derived from either harp or harbour seals.

Figure 8.5 illustrates the distribution of seal %NISP sorted by age. Again, as in N33.58W24.42, juvenile (46.94% of seal fragments) and immature (14.29% of seal fragments) seal material had a significant affect on the identification of the seal material, producing the high proportion of seal material identifiable to F.

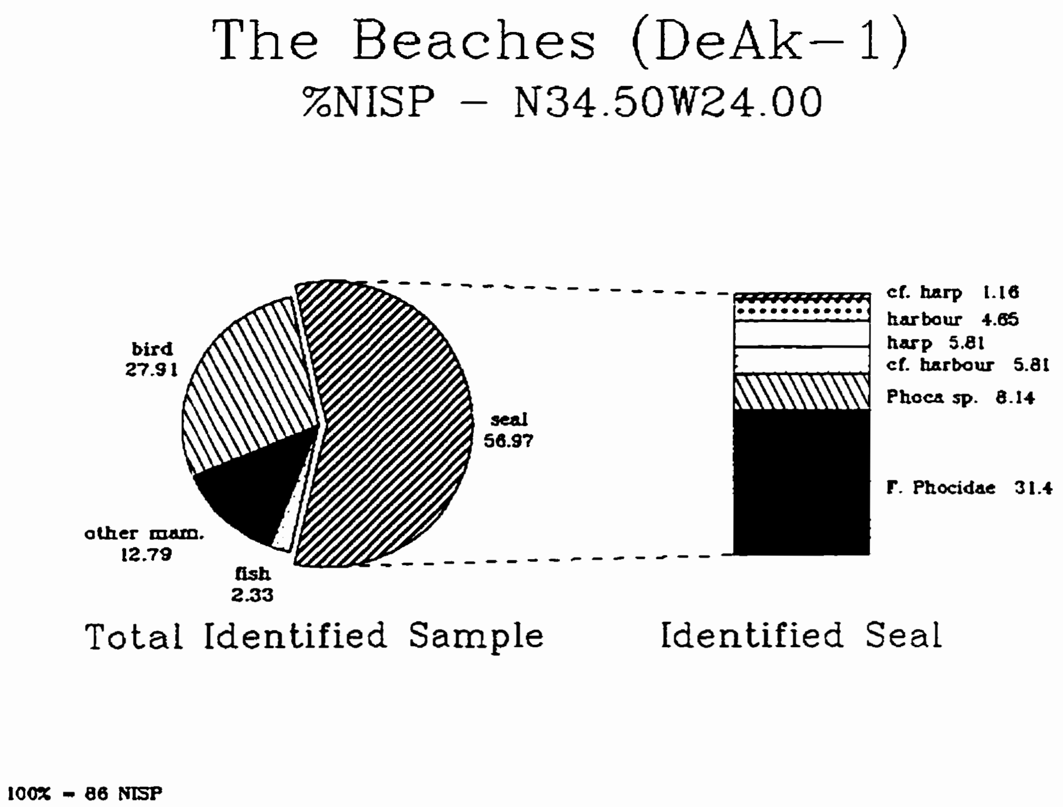



**Figure 8.4. Percentage Number of Identified Specimens (%NISP) from the Beaches unit N34.50W24.00 illustrating the contribution of the various levels of identification within the seal family.**

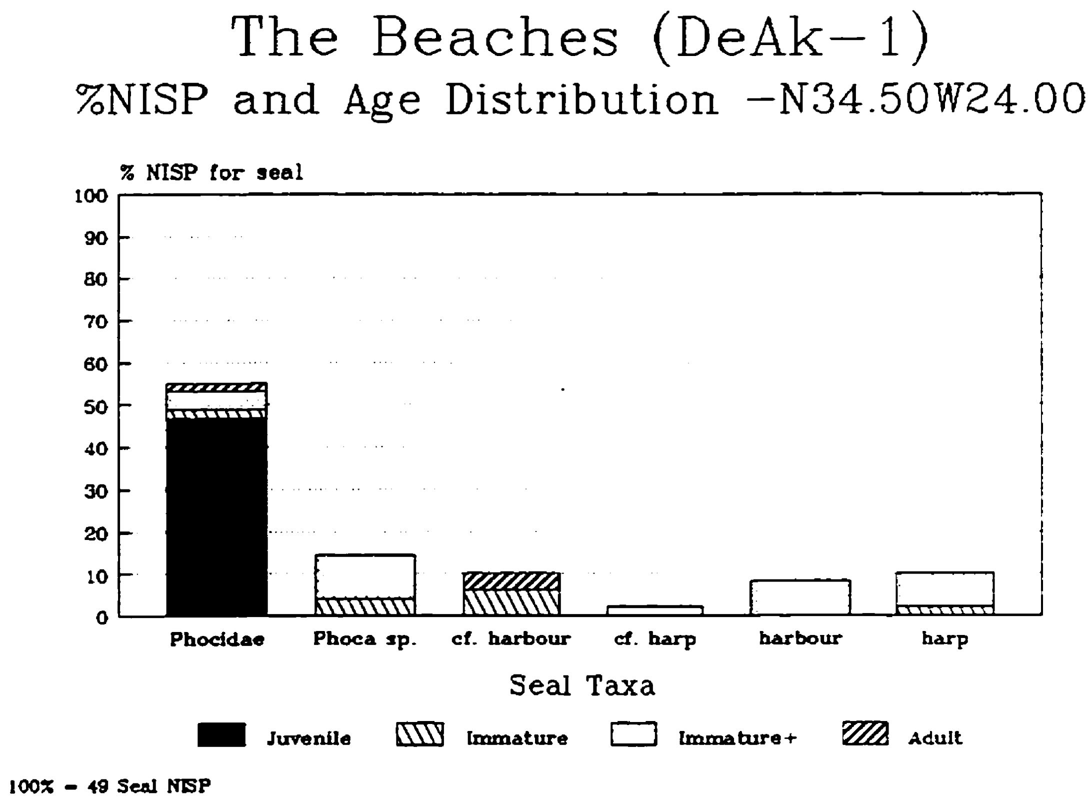



**Figure 8.5. Distribution of seal elements by age, expressed as a percentage of total identified seal specimens from the Beaches unit N34.50W24.00.**

Phocidae only. MNI analysis moderates the apparent dominance of juvenile material. Juvenile seal material supports an MNI value of one, compared to an MNI value of one each for immature cf. harbour, immature harp, immature+ harp, and immature+ harbour seal identifications. In other words, there is evidence for the presence of at least five seal individuals: one seal that died in its first summer, one harp and one harbour seal (cf.) both of which died before they finished growing, plus at least one adult sized harp and one adult sized harbour seal. It must be kept in mind that the immature harbour seal fragments were not identified with certainty, and it is possible these immature fragments were part of the immature harp seals which exhibited an MNI of one.

**Remaining Taxonomic Categories in N34.50W24.00**

Fragments from the remaining mammal material comprised 12.79% of the unit's identified sample. This remaining mammal material contained specimens from pine marten, river otter and caribou. MNI analysis produced values of one for each species.

Bird remains contributed 27.91% of the identified assemblage. At least three genuses, *Phalacrocorax* (cormorant), *Branta* (Canada, Brant or barnacle goose) and *Somateria* (common or King eider) were identified but the presence of double-crested cormorant and Canada goose material could only be identified with a 95% level of confidence. MNI analysis resulted in an MNI value of one for the cormorant and one for the goose material. There were at least two eider ducks detected within this unit. The class fish was represented by only two identifiable fragments: one Atlantic cod vertebra and one hyomandibular from a cf. longhorn sculpin.

### 8.3.3 Quantification of Test Pit 11

Test Pit 11 produced only 13 identifiable elements. Seal remains made up this entire sample. Harbour (2 fragments) and harp (3 fragments) seal material was positively identified while the remaining 8 fragments were assigned F. Phocidae identities. As illustrated in Figure 8.6, all of the juvenile material (53.85% of the identified sample) fell within the Phocidae category. Despite the small sample size, MNI analysis revealed the presence of at least four seal individuals; one immature$^{+}$ harp and one immature$^{+}$ harbour seal plus one immature and one juvenile seal.

## 8.4 Summary of Quantification of the Beaches Faunal Sample

The Beaches site produced 986 bone fragments from Little Passage context. The entire sample was comprised of mammal (75.96%), bird (21.10%), fish (1.12%) and Class Unknown (1.83%) remains. A sample of Mollusc material was also recovered for identification purposes only. This shell material was not included in the quantification process. Just over 24% (239 fragments) of the

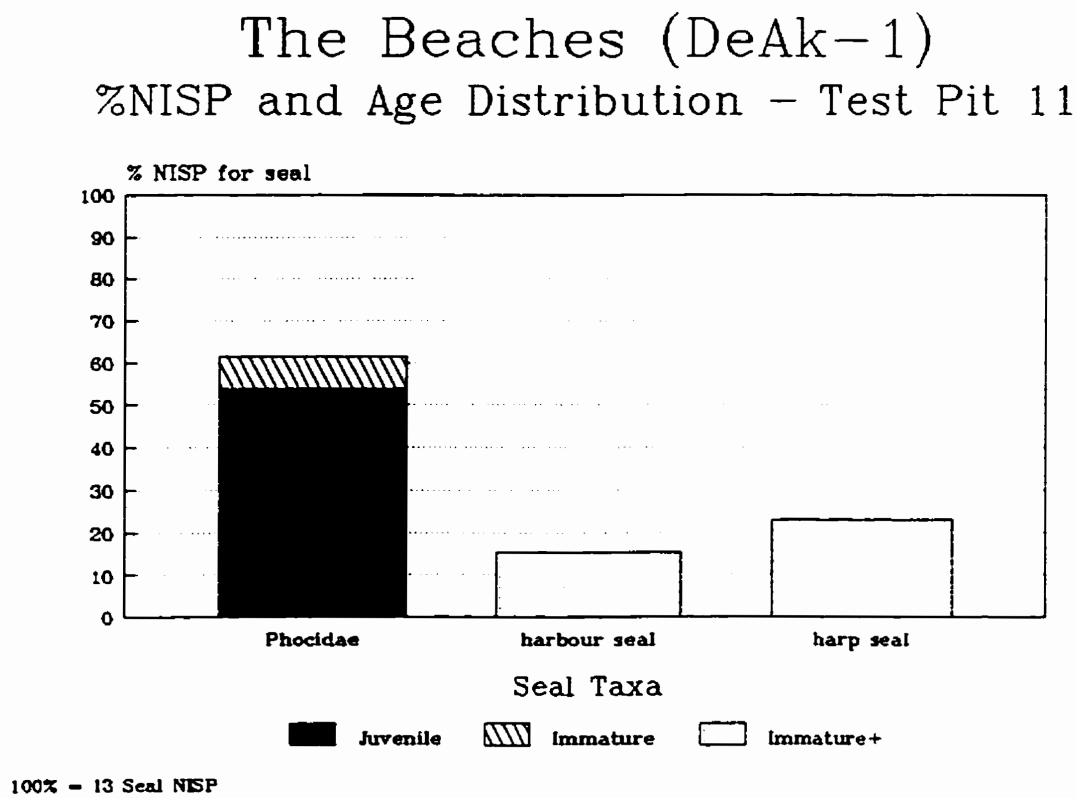



**Figure 8.6. Distribution of seal elements by age, expressed as a percentage of total identified seal specimens from the Beaches unit Test Pit 11.**

sample was identified to at least taxonomic Family. In all, ten animal species were identified with certainty and two additional species were considered to be identified with 95% confidence. The identified species were beaver, pine marten, river otter, harbour seal, harp seal, caribou, double-crested cormorant, Canada goose, common raven, Atlantic cod plus cf. wolf and cf. longhorn sculpin. In addition, it was determined that some species of eider and gull were also present in the assemblage. Shell fragments from soft-shell clam were also identified but not included in the quantification process. All but one of the species identified are still present in the immediate area of the Beaches site; the exception, wolf, is no longer found on the island of Newfoundland.

The material was considered in the context of three separate provenience units, N33.58W24.42, N34.50W24.00 and Test Pit 11. The two largest units, N33.58W24.42 (35.70% of all fragments) and N34.50.W24.00 (60.24% of all fragments) exhibited a similar composition of species in similar relative proportions. Test Pit 11 mirrored the seal component present in the two larger units. The two larger units both contained pine marten, harbour seal, harp seal, caribou, cormorant, cf. Canada goose, and eider material and in similar proportions. However, the major difference between these two units was that N33.58W24.42, also contained beaver, cf. wolf, gull sp. and raven material but only in the form of one or two fragments per taxon; while N34.50W24.00

contained an additional three species not found in N33.58W24.42; Atlantic cod and cf. longhorn sculpin were each represented by a single fragment, while five fragments were attributed to river otter. The Test Pit 11 identified sample was entirely made up of seal fragments and did not introduce any additional species.

While the two larger units may have differed in the actual number of fragments identified per species, in the end, each mammalian taxon (with the exception of the seals), in each unit, was represented by MNI values of one and all these individuals were of immature$^+$ osteological age. The two fish species were also represented by MNI values of one. All the bird taxa were represented by MNI values of one or two and all were of immature$^+$ osteological age.

Seal was by far the most frequently represented taxonomic group in all three units. While harp and harbour seals were identified in all three units, the majority of the seal material could only be identified to Family Phocidae. In the case of each unit, over half of the seal material exhibited a juvenile state of bone development. This juvenile level of development made it impossible to identify most of the seal specimens beyond F. Phocidae. While all three units exhibited similar proportions of juvenile seal material the three units did exhibit slight variations in the relative proportion of immature and immature$^+$/adult material. As Figure 8.7 illustrates, juvenile material made up roughly 50% to 60% of the seal sample in each unit. However, while about 26% of the seal sample was

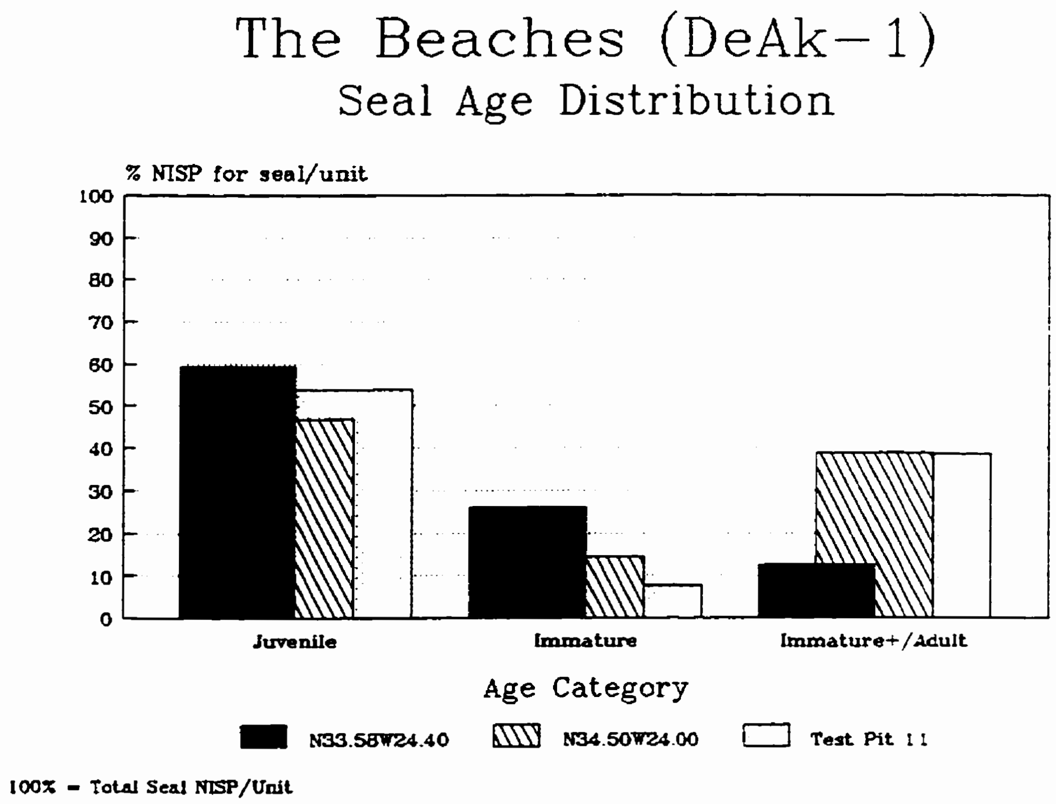



**Figure 8.7. Distribution of seal elements by age, expressed as a percentage of total identified seal specimens per unit from the Beaches site. Comparison of all three provenience units.**

comprised of immature seal material in N33.58W24.40 and 13% was from immature$^{+}$/adult individuals, the reverse was true for N34.50W24.00. In N34.50W24.00, about 14% of the seal sample exhibited an immature osteological age and 39% exhibited immature$^{+}$/adult osteological maturity.

The three provenience units produced similar MNI values for the seal portion of their samples. N33.58W24.42 contained at least four seal individuals: two juvenile Phocidae, one immature$^{+}$ harp and one immature seal which was probably a harbour seal. N34.50W24.00 contained at least four seal individuals, possibly five. Each of the following identifications was represented by an MNI of one: juvenile Phocidae, immature cf. harbour, immature harp, immature$^{+}$ harbour and immature$^{+}$ harp seal. It must be kept in mind that since the immature seals were not identified with certainty, there was a possibility that there was only one immature seal present in N34.50W24.00 and that was a harp seal. Test Pit 11 contained at least four individuals, one immature$^{+}$ harp, immature$^{+}$ harbour, immature Phocidae and one juvenile Phocidae.

To summarise, the small identified faunal sample from the Beaches site exhibited at least fourteen species, including a few bird and fish species. However, harp and harbour seal material made the most significant contribution to the assemblage not only in terms of raw number of bone fragments but also in terms of number of individuals present and volume of resource they represented.

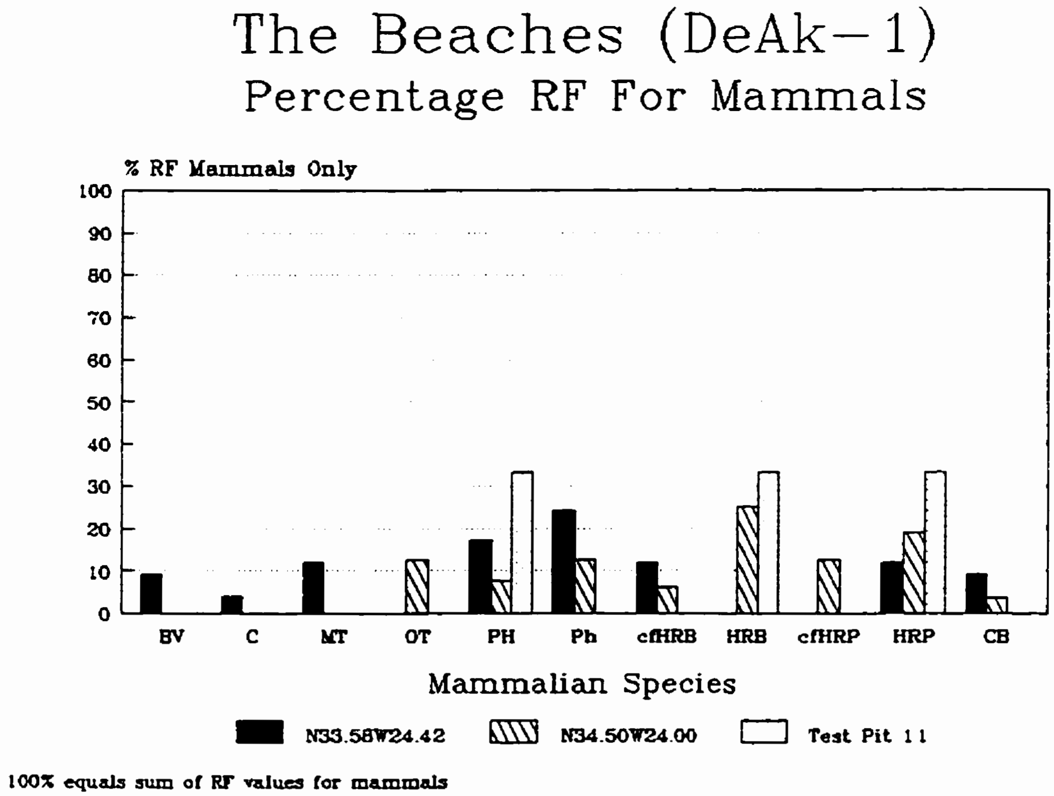



**Figure 8.8. Percentage Relative Frequency (%RF) for Beaches mammal sample.**

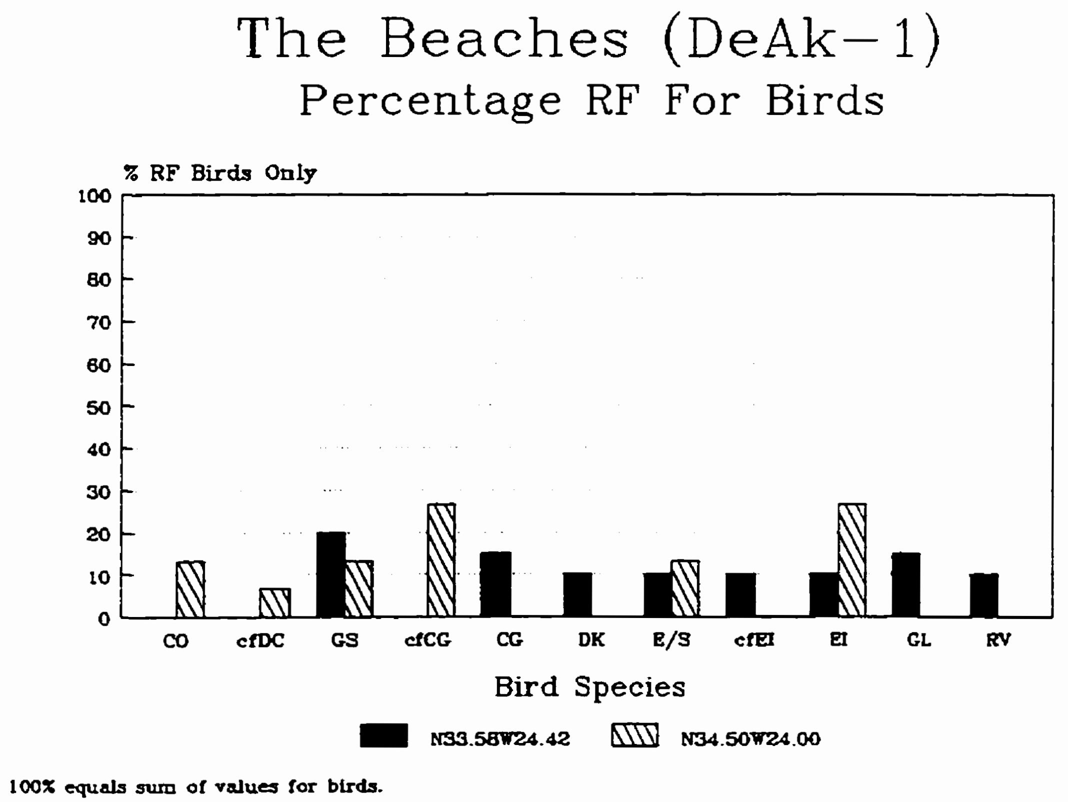



**Figure 8.9. Percentage Relative Frequency (%RF) for Beaches bird sample.**

# CHAPTER 9

## The Beaches

## Results of Analysis: Body Region Distribution, Habitat and Season Representation, Alterations to Faunal Material

The following is a continuation of the first level of analysis of the faunal assemblage from the Beaches site. This chapter provides a summary of the results of analysis of body region distribution, habitat representation and season of availability of the identified species. Chapter 9 concludes with a brief discussion of apparent alterations to the faunal material such as heat exposure and spiral fracturing.

### 9.1 Distribution of Body Regions Per Species

Identified elements were sorted according to five major body regions: head (H), trunk (TK), pectoral limb (PTLB), pelvic limb (PVLB), and extremities (EX), as defined in Chapter 5. Tables 9.1 to 9.3 summarise the distribution of identified fragments per body region for each taxon in each analytical unit.

As was discussed and applied in Chapter 7 (section 7.1.1), extremity fragments were subjected to two sorting methods. To review, elements classified as extremities were those limb elements occurring in the wrist or ankle joint and distal. In the table format, extremity fragments were sorted to limb whenever possible. Those extremity fragments which could not be identified to limb were collected in the column labelled EX-U, extremity, limb unknown. In the graphic illustrations, all extremity fragments were collected into a total extremity category (EX-T) and not included in the pectoral and pelvic limb totals.

In general, it was difficult to establish body region patterning when the majority of taxonomic categories were represented by less than 7 fragments each per analytical unit. This was a similar situation to the Inspector Island faunal sample. To make the two sites comparable, the same approach was taken for both sites. Elements identified to various taxonomic levels within a larger single taxonomic category (such as Family), were lumped together in order to form a bone grouping of analyzable size. In the case of the Beaches faunal assemblage, seal, goose and duck material were each lumped into their own taxonomic groups in units N33.58W24.42 and N34.50W24.00. Please see section 7.1 for a full explanation of why this approach was taken and the weaknesses which accompany it.

### 9.1.1 Body Region Analysis of N33.58W24.42

Body region analysis focused on the most prevalent taxonomic category, seal, with minor attention paid to the caribou, combined goose and combined duck material. Upon examination of Table 9.1, it can be seen that, after seal, caribou was the most completely represented (albeit sparsely), mammal category in terms of body regions. Four of the five body regions were represented; three regions were represented by a single element while the extremity category was represented by two elements. It is suggested that all parts of caribou were brought and perhaps used at the site. This unit produced a caribou MNI value of one.

Even after combining the goose material, the total NISP was quite low (NISP = 12; MNI = 2) and the resultant patterning was not considered particularly reliable or representative. The goose material provided representation in the trunk, pelvic and pectoral limb areas, with 66.67% of the material falling in the trunk area. Trunk fragments included thoracic vertebrae, sternal and furculum fragments which combined to represent the body portion of the carcass. The sternum in particular, represents the deep chest muscle area or "breast" of the adult goose. The leg and wing regions were represented by elements coming from the upper portions of each limb (i.e., the "drumstick" and the more muscled upper half of the wing). Figure 9.1 provides a comparative illustration of goose body region distribution for units N33.58W24.42 and N34.50W24.00.

**Table 9.1. Distribution of skeletal elements by body region for N33.58W24.42.**

**Body Region**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| | | | | | | | | | |
| Phocidae | 4 | 41 | 3 | 3 | 5 | 1 | 5 | 6 | 23 |
| Phoca sp. | 3 | | | | | | | | |
| cf. harbour seal | | | 1 | | | | | | |
| harp seal | | | | 1 | | | | | |
| | | | | | | | | | |
| Seal combined | 7 | 41 | 4 | 4 | 5 | 1 | 5 | 6 | 23 |
| | | | | | | | | | |
| beaver | 1 | | | | | | | 1 | 1 |

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| *Canis* sp. | 1 | | | | | | | | |
| pine marten | | 2 | | 1 | | | | | |
| caribou | 1 | | | 1 | | | 1 | 1 | 2 |
| double-crested cormorant | | 1 | | | | | | | |
| goose | | 6 | | | | | | | |
| *Branta* sp. | | 1 | | | | | | | |
| Canada goose | | 1 | | 1 | | | 3 | | |
| duck | | 3 | | 1 | 1 | | | 1 | 1 |

**Table 9.1 continued. Distribution of skeletal elements by body region for N33.58W24.42.**

**Body Region**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| eider/scoter | | | 1 | 1 | | | | | |
| eider sp. | | | 1 | 3 | 1 | | | | |
| gull | | 1 | | | | | 1 | | |
| common raven | | | 1 | | | | | | |

The combined duck sample (total NISP = 14; MNI = 2) was represented in the pectoral limb, extremity, trunk, and pelvic limb regions. The majority of the material came from the upper wing and shoulder area. The coracoid elements, considered part of the shoulder girdle (PTG) would also be closely associated with the highly developed chest muscles of the trunk region. Figure 9.2 provides a comparative illustration of duck body region distribution for units N33.58W24.42 and N34.50.W24.00.

The combined seal category was the most completely represented taxonomic grouping in terms of body region distribution. All five of the major body regions were represented as can be seen in Table 9.1. Figure 9.3 illustrates seal body region distribution and the contribution of each identified seal taxa to the overall pattern.

In terms of NISP, the trunk was the most frequently represented region, comprising over 42% of the seal sample, followed closely by the total extremity region comprising over 35% of the seal sample. The head, pectoral and pelvic limb regions were virtually equally represented at about 7% each.

As was the case for the Inspector Island assemblage, unfused juvenile and immature seal vertebrae significantly increased the representation of the trunk area. Figure 9.4 illustrates the relative contribution of the various age categories to the distribution of seal material by body region. Only three trunk fragments could be

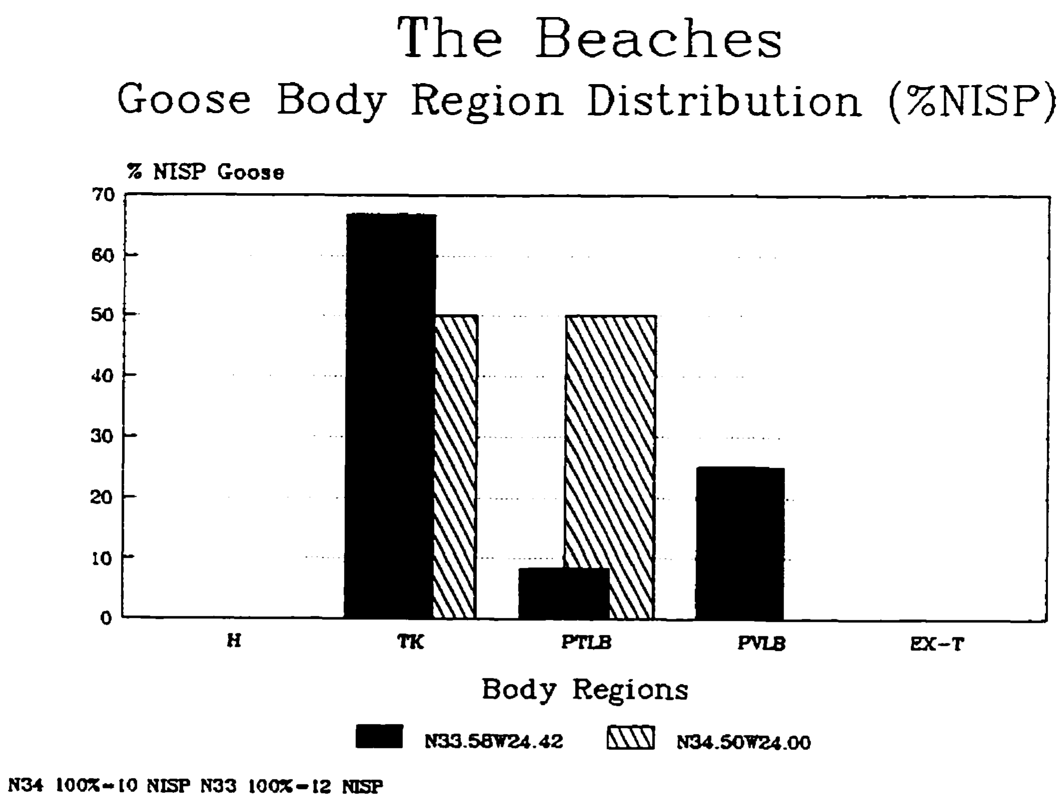



**Figure 9.1. Distribution of percentage of number of identified goose specimens (%NISP) by body region for units N33.58W24.42 and N34.50W24.00.**

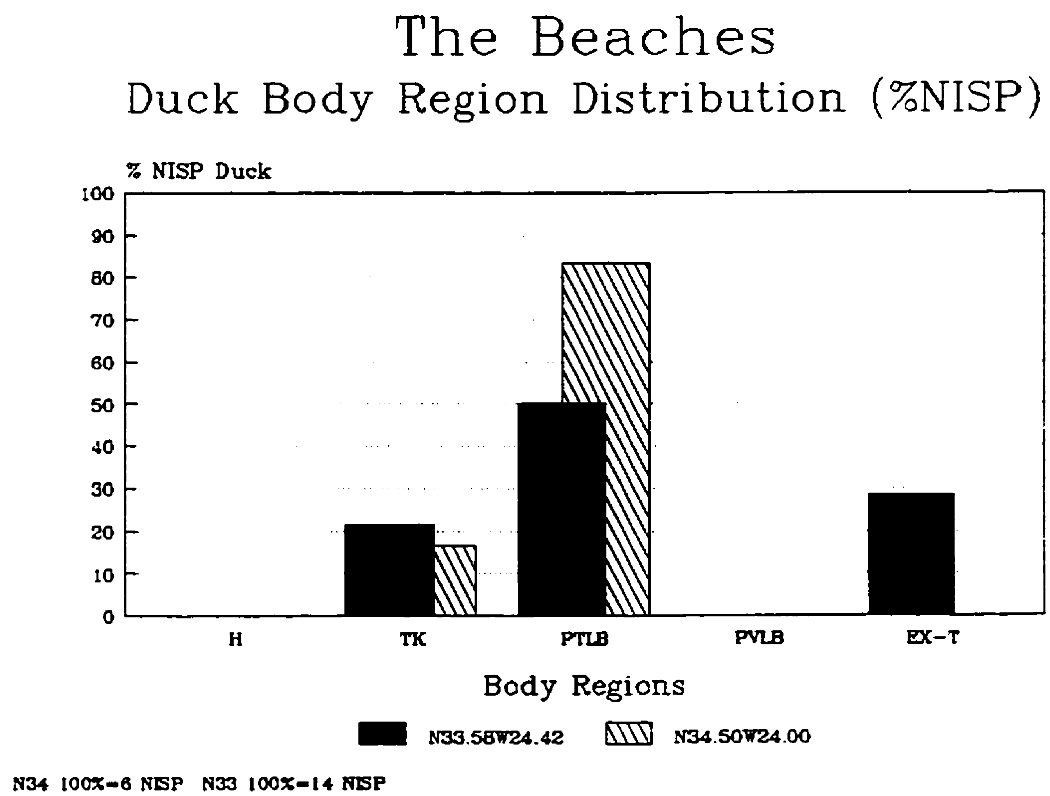



**Figure 9.2. Distribution of percentage of number of identified duck specimens (%NISP) by body region for units N33.58W24.42 and N34.50W24.00.**

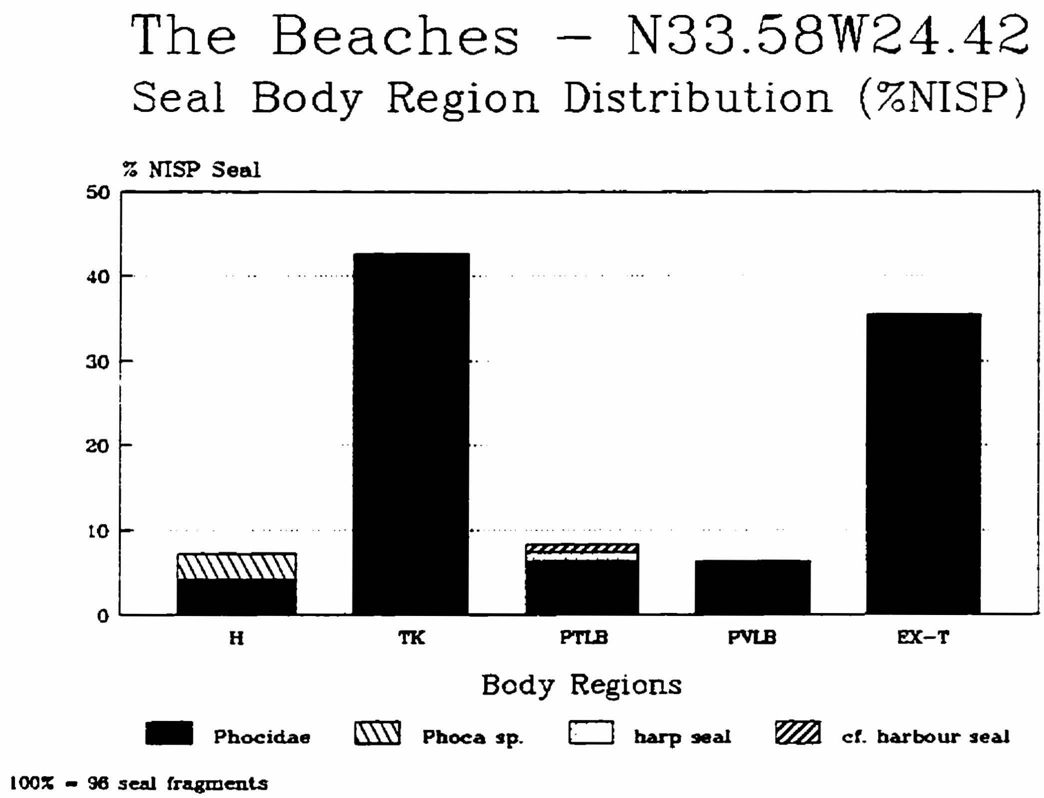



**Figure 9.3. Distribution of percentage of number of identified seal specimens (%NISP) by body region for N33.58W24.42, illustrating contribution per taxonomic category.**

attributed to the immature$^{+}$ age category. An attempt was made to account for the exaggerating affect of this unfused juvenile and immature seal material. Section 7.1.1 details the method of correction. When applied, the juvenile and immature vertebrae fragment counts decreased from raw NISP values of 25 and 12 to corrected minimum numbers of vertebrae of 6 and 4, respectively. Thus the %NISP representation of the trunk region was reduced from about 42% to 20%. However, after the correction was applied, the trunk region remained a highly represented region, only moving from first to second most frequently represented region.

Over 35% (49% after applying the correction to the trunk material) of the identified seal fragments fell into the total extremity category (EX-T). This region was represented by the whole spectrum of extremity elements from carpals, tarsals and metapodials to proximal, middle and distal phalanges. Again a large proportion of this region was represented by juvenile specimens (almost 66% of the extremity fragments). While the juvenile elements were represented by unfused diaphyses and epiphyses no cross-mending was possible, unlike the case of the juvenile vertebral fragments.

The head, pectoral and pelvic limb regions were virtually equally represented in terms of %NISP, each region contributing less than 10% of the total NISP. None of the head material was identifiable to species, but the region was represented in every age category. The pectoral limb was also represented in all age categories, with one element identified to immature$^{+}$ harp seal and one element identified as immature cf. harbour seal. All the pelvic limb material was derived from juvenile seal of unknown species.

This unit contains evidence to support the presence of four seal individuals: two juvenile (one appears to be newborn) Phocidae, one adult sized harp seal and one immature individual identified as cf. harbour seal. Analysis of the seal material in terms of body region distribution highlights just how thinly these four individuals are spread across all regions. It appears that all parts of juvenile seals were processed/consumed/disposed of in the process of creating this unit. Immature seal material was represented in all but the pelvic limb region. Adult sized seals were scarcely represented in this unit (%NISP seal = 12.50). However, this unit was unique in that it contained the only representation of adult sized seal elements in the pectoral limb region, including an ulna which could be identified to harp seal. Rather than illustrate what parts of the immature and adult seals are present, this analysis highlights the question, "Where are the rest of these individuals?" One explanation is that the adult sized seals were being processed somewhere else, either in another part of the site or off site. However, in order to support such a claim, there is definitely a need for a larger faunal assemblage that is more representative of the site's activities.

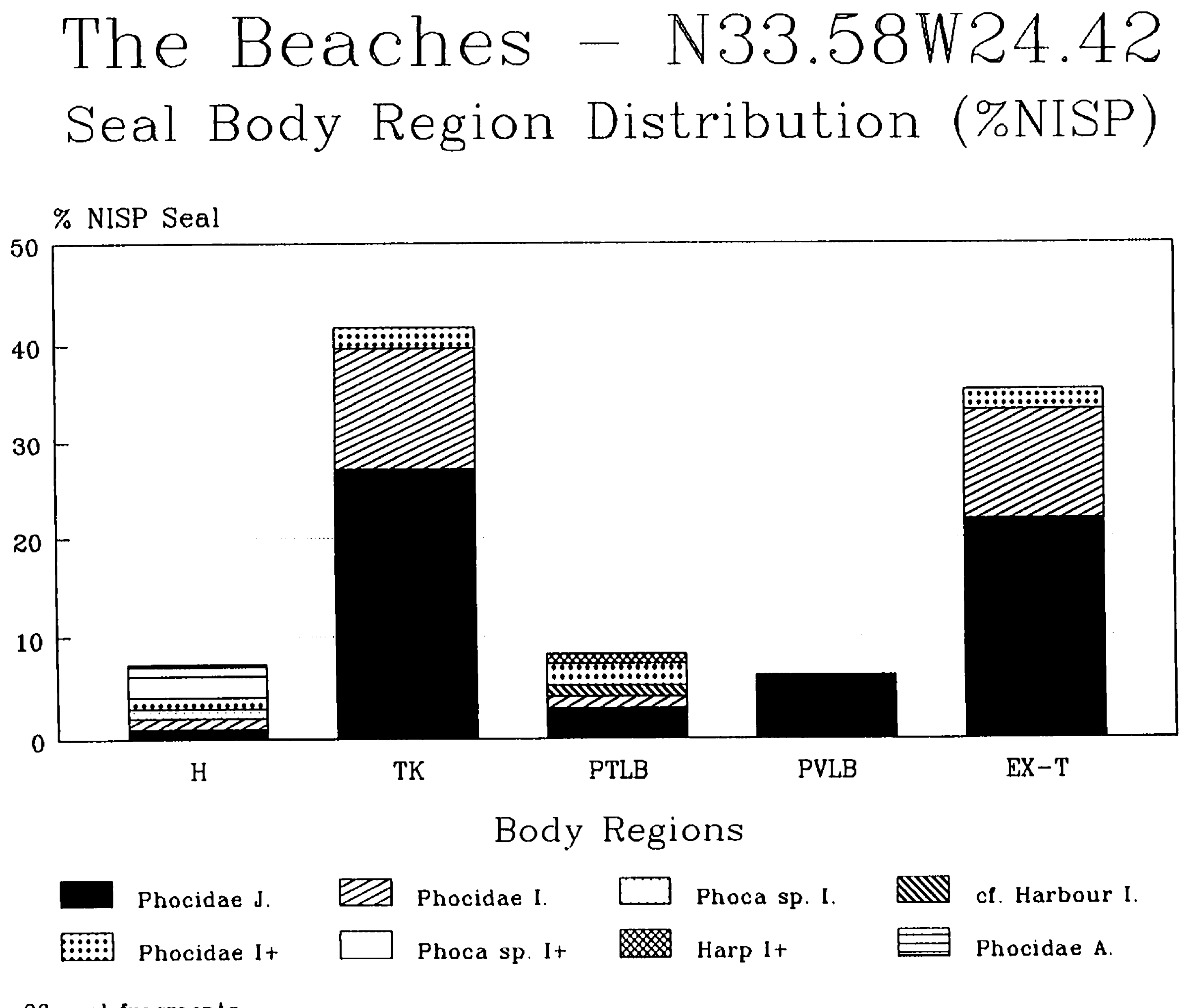



**Figure 9.4. Distribution of percentage of number of identified seal specimens (%NISP) by body region for N33.58W24.42, illustrating contribution per age category.**

### 9.1.2 Body Region Analysis of N34.50W24.00

The faunal material from this unit was subjected to the same sorting and analysis as described for N33.58W24.42. Table 9.2 summarises each taxon sorted by body region. Table 9.2 highlights just how sparsely each taxon was represented. Even the combined seal category provided little material to work with (NISP = 49) especially considering the fact that the unit contained evidence for the presence of four, probably five, seals. However, as Figure 9.5 illustrates, the combined seal material provided representation in all body regions.

In terms of NISP, the trunk and head regions were virtually equally represented, each containing about 40% of the seal fragments. As illustrated in Figure 9.6, unfused juvenile vertebrae again played a role in exaggerating the presence of trunk material, however, the trunk region remained the second most frequently represented region after the correction was applied to the juvenile vertebrae. Total extremities and pelvic limb region were equally represented, each region containing about 8% of the total seal fragments. Only two elements represented the region of the pectoral limb.

Juvenile material, which made up roughly half the seal sample, was represented in all body regions, suggesting that whole juvenile seals were processed at the site. Adult sized seal material comprised a larger portion of this unit than in N33.58W24.42 (%NISP seal = 38.78). The majority of adult material came from the head region, with a few vertebra fragments and a single extremity fragment representing the trunk and extremity regions, respectively. This unit's small sample size did not help to clarify the handling process of adult seals.

### 9.1.3 Body Region Analysis of Test Pit 11

Body region analysis of this extremely small assemblage was limited to sorting the material by body region in Table 9.3 and illustrating this distribution in Figures 9.7 and 9.8.

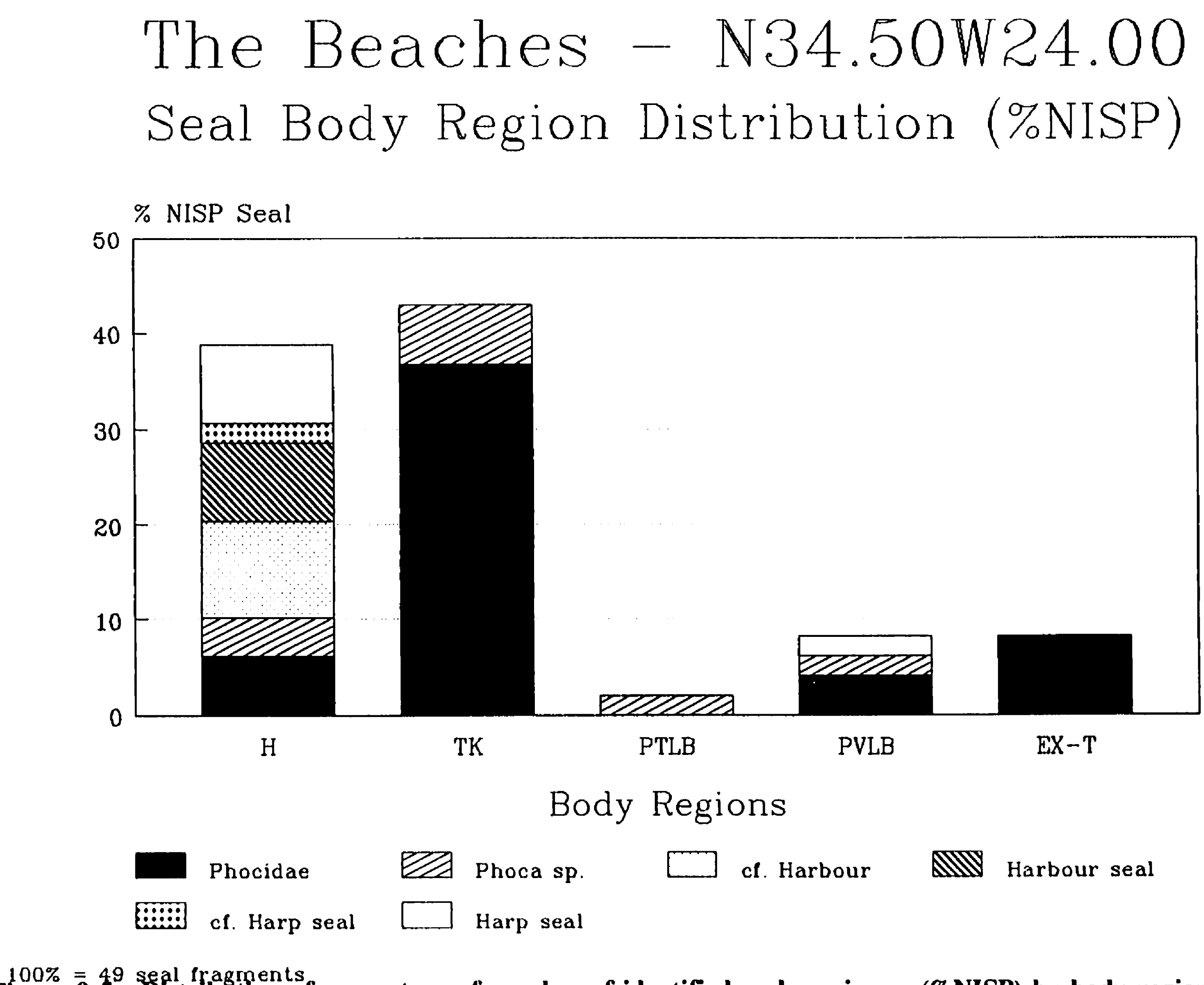



**Figure 9.5. Distribution of percentage of number of identified seal specimens (%NISP) by body region for N34.50W24.00, illustrating contribution per taxonomic category.**

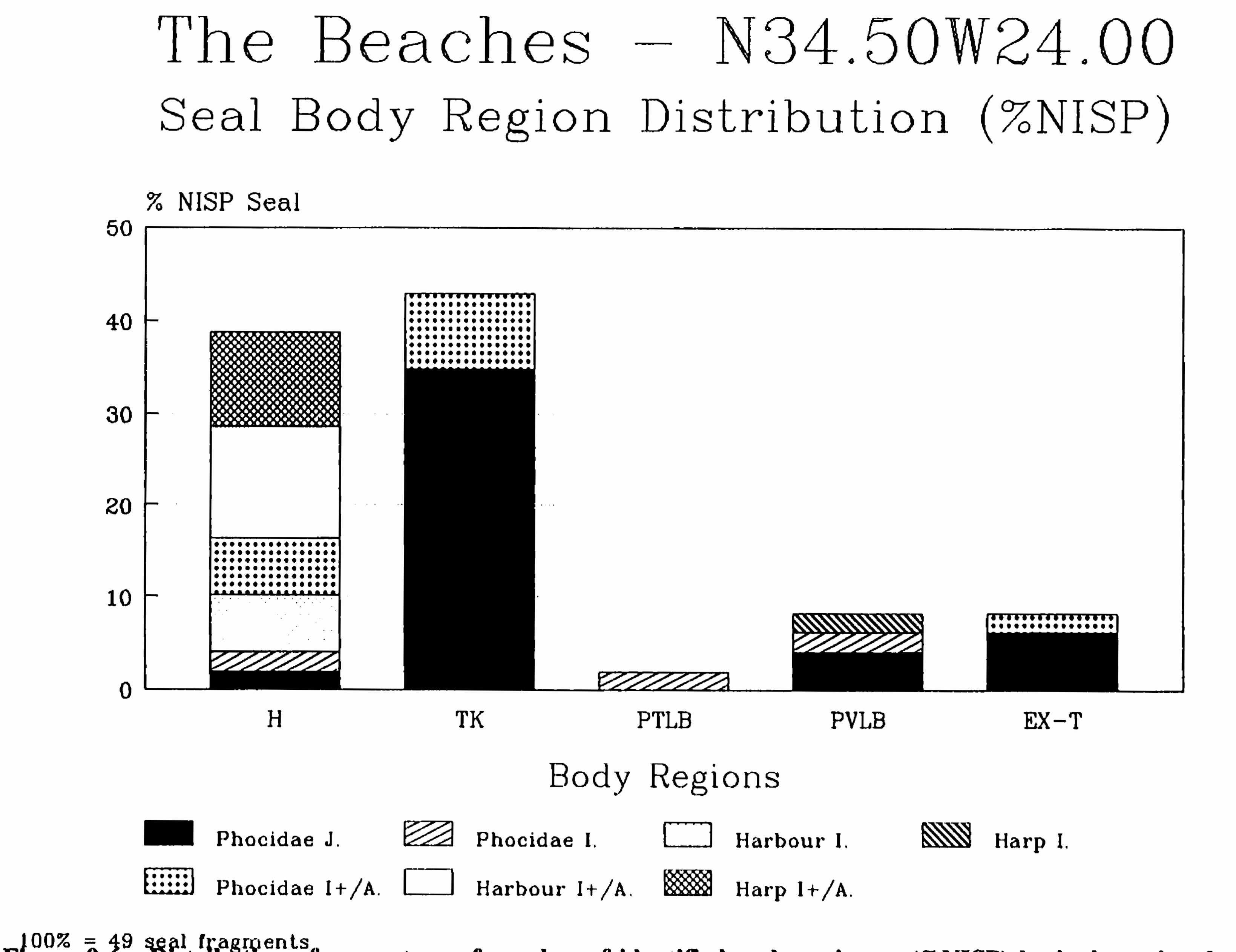



**Figure 9.6. Distribution of percentage of number of identified seal specimens (%NISP) by body region for N34.50W24.00, illustrating contribution per age category.**

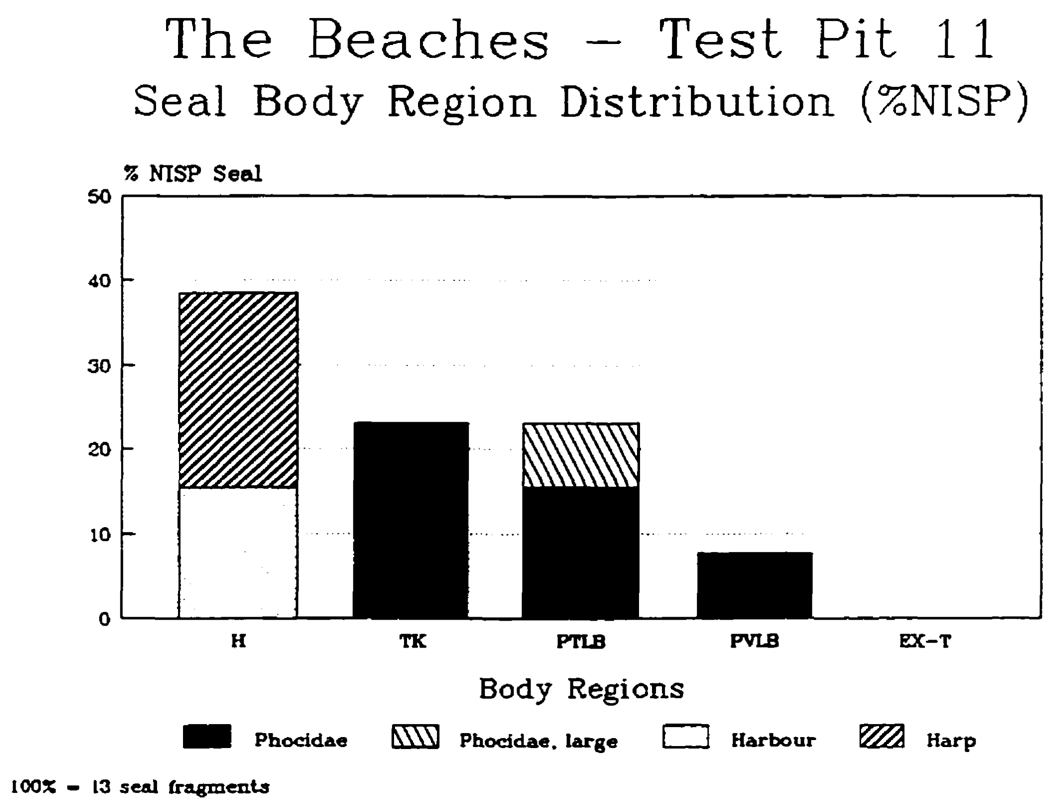



**Figure 9.7. Distribution of percentage of number of identified seal specimens (%NISP) by body region for Test Pit 11, illustrating contribution per taxonomic category.**

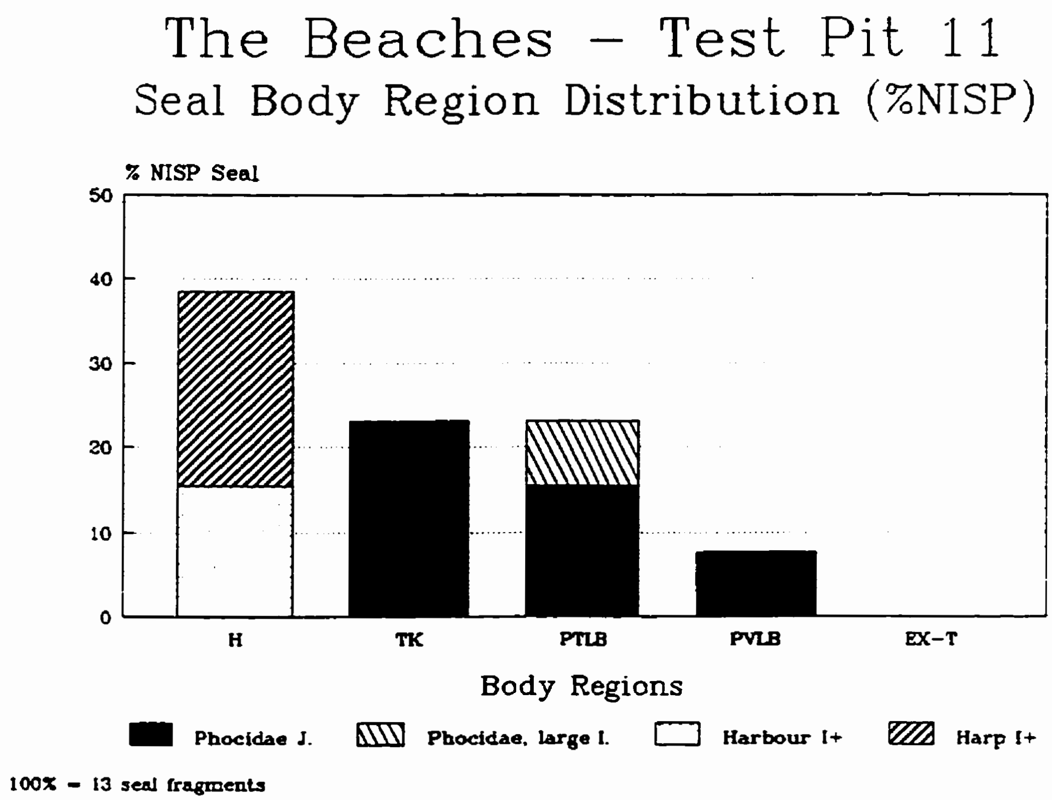



**Figure 9.8. Distribution of percentage of number of identified seal specimens (%NISP) by body region for Test Pit 11, illustrating contribution per age category.**

**Table 9.2. Distribution of skeletal elements by body region N34.50W24.00.**

**Body Region**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| Phocidae | 3 | 18 | | | 1 | 1 | 1 | 1 | 2 |
| *Phoca* sp. | 2 | 3 | 1 | | | | 1 | | |
| cf. harbour seal | 5 | | | | | | | | |
| harbour seal | 4 | | | | | | | | |
| cf. harp seal | 1 | | | | | | | | |
| harp seal | 4 | | | | | | 1 | | |
| | | | | | | | | | |
| seal combined | 19 | 21 | 1 | 0 | 1 | 1 | 3 | 1 | 2 |

**Table 9.2 continued. Distribution of skeletal elements by body region N34.50W24.00.**

**Body Region**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| pine marten | | 1 | | | | | | | |
| river otter | | 1 | | | | | 1 | 3 | |
| caribou | | | | | | | 1 | | 4 |
| | | | | | | | | | |
| cormorant sp. | 1 | | | | 2 | | | 1 | |
| cf. double-crested cormorant | | 1 | | | 2 | | | 1 | |
| goose | | 1 | | 1 | | | | | |
| cf. Canada goose | | 4 | 4 | | | | | | |

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| eider/scoter | | 1 | 1 | | | | | | |
| eider sp. | | | 4 | | | | | | |
| | | | | | | | | | |
| Atlantic cod | | 1 | | | | | | | |
| cf. longhorn sculpin | 1 | | | | | | | | |

**Table 9.3. Distribution of skeletal elements by body region Test Pit 11.**

**Body Region**

| Taxon | Head | Trunk | Pectoral Limb | | | Pelvic Limb | | | EX-U |
|---|---|---|---|---|---|---|---|---|---|
| | | | PTG | LB | EX | PVG | LB | EX | |
| | | | | | | | | | |
| Phocidae | | 3 | 1 | 1 | | | 1 | | |
| Phocidae, large | | | 1 | | | | | | |
| harbour seal | 2 | | | | | | | | |
| harp seal | 3 | | | | | | | | |
| | | | | | | | | | |
| Seal combined | 5 | 3 | 2 | 1 | | | 1 | | |

## 9.2 Season of Availability of Species Identified in the Beaches Faunal Assemblage

Modern natural history records were used to infer season of availability for species identified in the Beaches faunal assemblage. As summarized in Tables 9.4 to 9.6, all three units contained species which were available near the site throughout the year. However there were four pieces of information which pointed to the exploitation of animals during a narrower period of the year. The combination of the presence of harp seal, juvenile seal, double-crested cormorant and Canada goose were positive indications that animal resources were exploited during a period from late December until around the beginning of September.

All three units contained harp seal material. As discussed in section 7.3, harp seals pass the northeast coast of Newfoundland on their southward migration in late December, and return to stay off the northeast coast in late February until the end of April. Although it may have been possible to obtain the seals on their swift southward pass, it is considered more likely that they were taken while they lingered on or near the ice during the period from late February to the end of April. This species would have been especially attractive during the years when the ice carrying the seals was blown right into Bonavista Bay (Chafe 1923).

The Beaches assemblage contained a high proportion of juvenile seal material. It was disappointing that none of this juvenile material could be identified to

**Table 9.4. Months of availability of species identified in the Beaches faunal assemblage, provenience unit N33.58W24.42, based on modern natural history records.**

| | J F M A M J J A S O N D |
|---|---|
| **N33.58W34.42** | |
| beaver | ------------------------------------------------------------------------ |
| marten | ------------------------------------------------------------------------ |
| *Canis* sp. | ------------------------------------------------------------------------ |
| Phocidae•ﬃ | -----------^^^^^^^^^^^^^^^^^^^^^^^^^^^?-------------------------- |
| harbour seal | ------------------------------------------------------------------------ |
| harp seal | - **———————** – |
| caribou | ------------------------------------------------------------------------ |
| double-crested cormorant• | ?---------------------------? |
| *Branta* sp. | ?---------------------------------? |
| Canada goose | ?---------------------------------? |
| eider sp. | ------------------------------------------------------------------------ |
| scoter sp. | --------------? ?------- |
| sea gull | ------------------------------------------------------------------------ |
| raven | ------------------------------------------------------------------------ |
| soft-shell clam° | ------------------?t------------------------------t?---------------------- |

• "^" symbols indicate that this unit contained juvenile elements for this taxonomic category and highlights the months of their availability.

ﬃ Bold symbols indicate that this species is more likely to be available near the site during the highlighted months of the year.

- Question marks indicate that there is some variation from year to year, in the arrival and/or departure dates for the species and that available natural history references provide undefined seasons rather than specific months or weeks of the year for arrival and departure times.

- "t" symbol indicates that this species is toxic during the enclosed period.

**Table 9.5. Months of availability of species identified in the Beaches faunal assemblage, provenience unit N34.50W24.00, based on modern natural history records.**

| | J F M A M J J A S O N D |
|---|---|
| **N34.50W24.00** | |
| marten | ------------------------------------------------------------------------ |
| otter | ------------------------------------------------------------------------ |
| Phocidae | -----------^^^^^^^^^^^^^^^^^^^^^^^^^^^?----------------------------- |
| harbour seal | ------------------------------------------------------------------------ |
| harp seal | - ---------------- - |
| caribou | ------------------------------------------------------------------------ |
| double-crested cormorant* | ?-----------------------------? |
| cf. Canada goose | ?-------------------------------------? |
| eider sp. | ------------------------------------------------------------------------ |
| scoter sp. | --------------? ?-------- |
| Atlantic cod | ------------------------------------------------------------------------ |
| longhorn sculpin | ------------------?-------------------------------?----------------------- |

**Table 9.6. Months of availability of species identified in the Beaches faunal assemblage, provenience unit Test Pit 11, based on modern natural history records.**

| | J F M A M J J A S O N D |
|---|---|
| **Test Pit 11** | |
| Phocidae | ------------^^^^^^^^^^^^^^^^^^^^^^^^^^?---------------------------- |
| harbour seal | ------------------------------------------------------------------------------- |
| harp seal | - ---------------- - |

species. It was considered most likely that these juvenile elements were from either harp or harbour seals. Harp seals are born around the end of February and the beginning of March. Harbour seals are born in May and June. Both N33.58W24.42 and N34.50W24.00 contained seal elements exhibiting a newborn appearance, which indicated at least one seal individual died sometime between the end of February and the end of June or beginning of July, at the latest.

It was estimated that the older juvenile seal material would have been available during a period from March until September, beginning with the availability of new harp seals and ending with the maturation of the resident juvenile harbour seal population. Older juvenile harp seal material would have been available from March until the young seals followed the receding ice edge northward. However, in the case of the resident juvenile harbour seals, an estimate had to be made as to when this species' skeletal elements would no longer exhibit juvenile cortex over 100% of their surface. It was estimated that this level of maturation would have been reached by September after a birth in May or June of the same year. This estimate was based upon comparative evidence in the reference collection and knowledge of the rapid rate of seal development in general.

Further corroborative evidence was provided by the presence of double-crested cormorant in units N33.58W24.42 and N34.50W24.00. This species is considered a breeding migrant which is known to arrive in the area of Bonavista Bay by late April and to stay until around the end of summer (Burrows 1989; Peters and Burleigh 1951).

The presence of Canada goose pointed to exploitation during the summer months. In general the current literature lists this species as a breeding migrant that arrives sometime in April when there is a bit of open water available and stays until the end of summer (Montevecchi and Tuck 1987). Although Canada goose is most prevalent in the spring and summer months, recent observations suggest this species is not such a reliable indicator of spring and summer exploitation. While the majority of Canada geese visit Newfoundland as breeding migrants, there are rare sightings on record for every month of the year (Peters and Burleigh 1951:83). More specifically, it is reported that groups of Canada geese have been seen in winter on the coast near Traytown which is approximately 20km southwest of the Beaches (Burrows 1989: 88). However, Canada goose is most likely to be available in the spring and summer months.

It is possible that specimens identified as eider/scoter may be indicators of a winter exploitation. The three scoter species which live in the area are winter residents only, arriving in late October or early November and leaving in the spring. Scoter availability would overlap with that of harp seals, and juvenile seals in general. Due to the lack of a more specific identification these scoter specimens were not distinguished from the eider species which are year round residents of the island.

To summarise, the Beaches faunal assemblage contained species which are currently available all year round. However, the minimum period within which these faunal indicators could have been obtained extends from late February until the end of the summer season.

## 9.3 Habitats Represented in the Beaches Faunal Assemblage

Tables 9.7 to 9.9 summarise the habitats represented by the species identified in the Beaches faunal assemblage. In general, the Beaches faunal assemblage contains indicators for all the major Newfoundland habitats. However, the marine environment does appear to be where the habitats of the majority of identified species overlap and where the greatest *volume* of the resources represented in the identified sample would have been obtained. Those terrestrial species known to inhabit the Newfoundland interior, also forage along the marine coast or live on freshwaterways that empty into Bonavista Bay.

For the purpose of analysis, the marine environment has been considered as two major habitat zones, the inner coastal and outer coastal zones as defined in section 7.3. The greatest variety of species identified and the greatest volume of resource which they represent, would have been found in the protected inner coastal zone, where the site itself was located. While harp seals have been known to make their way into the inner coastal zone, they are much more likely to be found in the outer coastal zone. Harp seals are usually available in the outer coastal zone located beyond the outer islands of Bonavista Bay on the open ocean ice. Sometimes this ice is driven against the eastern shore of Newfoundland and the seals can be accessed by foot from Newfoundland and its coastal islands.

With regard to caribou habitat, MacLean (1991b:11), citing the residents of Burnside, noted that in recent memory, caribou were known to be "common visitors to the bare plateau atop the Bloody Bay Hills in Bloody Bay Cove." Bloody Bay Cove is accessible by water approximately 10km to the southwest of the Beaches, as the crow flies. The Bloody Bay hills are visible from the Beaches site.

**Table 9.7. Habitats occupied by species identified in the Beaches faunal assemblage based on modern natural history records.**

| N33.58W24.42 | INTERIOR | | | COAST | | | | |
|---|---|---|---|---|---|---|---|---|
| Taxon | Barrens | Forest | Freshwater | Forest | River | Island | Inshore | Offshore |
| beaver | X | X | X | X | X | | | |
| pine marten | | X | | X | | | | |
| *Canis* sp. | X | X | | X | | X | | |
| harbour seal | | | X | | X | | X | |
| harp seal♦ | | | | | | | | X wh |
| caribou | X | X | | X | | | | |
| double-crested cormorant | | | X | X | X | X | X | |
| Canada goose* | / | / | X | | X | | X | |
| eider sp. | | | / | | X | X | X | / |
| scoter sp. | | | X | | X | X | X | / |
| sea gull | | | X | | | | X | X |
| raven | X | X | | X | | X | | |
| soft-shell clam | | | | | X | | X | |

**Table 9.8. Habitats occupied by species identified in the Beaches faunal assemblage based on modern natural history records.**

| N34.50W24.00 | INTERIOR | | | COAST | | | | |
|---|---|---|---|---|---|---|---|---|
| **Taxon** | **Barrens** | **Forest** | **Freshwater** | **Forest** | **River** | **Island** | **Inshore** | **Offshore** |
| pine marten | | X | | X | | | | |
| river otter | | X | X | X | X | X | | |
| harbour seal | | | X | | X | | X | |
| harp seal | | | | | | | | X wh |
| caribou | X | X | | X | | | | |
| double-crested cormorant | | | X | X | X | X | X | |
| Canada goose | / | / | X | | X | | X | |
| eider sp. | | | / | | X | X | X | / |
| scoter sp. | | | X | | X | X | X | / |
| Atlantic cod | | | | | | | X | X |
| longhorn sculpin | | | | | | | X | X |

**Table 9.9. Habitats occupied by species identified in the Beaches faunal assemblage based on modern natural history records.**

| Test Pit 11 | INTERIOR | | | COAST | | | | |
|---|---|---|---|---|---|---|---|---|
| **Taxon** | **Barrens** | **Forest** | **Freshwater** | **Forest** | **River** | **Island** | **Inshore** | **Offshore** |
| harbour seal | | | X | | X | | X | |
| harp seal | | | | | | | | X wh |

- "/" indicates occasional resident.
- "B" indicates species breeds in this habitat.
- "W" indicates species is a winter resident in this habitat.
- "wh" indicates species whelps in this habitat, however, unit did not contain juvenile elements for these species.

## 9.4 Evidence of Alteration to the Beaches Faunal Material

In general, the Beaches material contained a small percentage (less than 4% of the entire faunal assemblage) of altered specimens. All altered specimens came from the large midden Feature 4 (N33.58W24.42 and N34.50W24.00). Heat exposure was the most common form of alteration (affecting 1.42% of entire Little Passage faunal assemblage), followed by spiral fracturing (affecting 1.22% of entire Little Passage faunal assemblage). Only one element exhibited possible carnivore gnawing but this was uncertain. One small irregularly shaped piece of large mammal longbone had a slightly polished appearance and what appeared to be red ochre staining. Some calcined clam shell was noted during the excavation of the large midden feature. Overall, it did not appear that heat exposure or any other form of alteration, had a significant affect on the preservation of faunal material in the midden feature.

Of the altered sample only nine specimens were identified to at least taxonomic family (see Table 9.10). These included six caribou, two harp seals and one Phocidae fragment. Only the caribou fragments exhibited spiral fracturing, while a single harp seal skull element exhibited heat exposure. Only three identified specimens exhibited trowel trauma.

**Table 9.10 Summary of identified specimens from the Beaches site exhibiting some form of alteration.**

| TAXON | ALTERATION | | | | |
|---|---|---|---|---|---|
| | Charred | Spiral Fractured | Chopped | Trowel Trauma | Total |
| caribou | | 4 | 1 | 1 | 6 |
| harp seal | 1 | | | 1 | 2 |
| Phocidae | | | | 1 | 1 |
| | | | | | |
| | 1 | 4 | 1 | 3 | 9 |

## 9.5 Summary Description of the Beaches Identified Faunal Sample

Chapter 9 presented a discussion of the evidence for body region patterning, season of availability and habitat representation as found in the identified faunal sample from the Beaches site. This chapter also looked at evidence of alteration of the identified faunal material.

Body region analysis focused on the most numerous taxonomic category, seal, as it was represented in the two largest analytical units (N33.58W24.42 and N34.50W24.00). Both units indicated that all body regions of juvenile and immature seals were present, perhaps suggesting that whole individuals were processed at the site. Overall, the Beaches site's small faunal sample did not help to address questions regarding the processing of adult seals. Fragments representing adult sized seals (immature$^{+}$ and adult) were remarkably scarce, especially considering the minimum number of individuals calculated for each of these analytical units. Most of the adult material came from the head region. The trunk region was the second most frequently represented region for adult sized seal material, followed by the limb extremities. However, N33.58W24.42 was unique in that it did produce some adult sized pectoral limb elements, including an immature$^{+}$ harp ulna. Given the MNI analysis for the seal species it does appear that a large portion of the adult sized seals are missing. The most obvious conclusion is, given the small sample size, the faunal assemblage was not particularly representative of what had originally been present on the site. Another possible explanation is that the adult seal material was left off site because these seals were initially processed somewhere else.

For unit N33.58W24.42, minor consideration was given to the distribution of caribou, combined goose and combined duck material terms of body region distribution. The handful of caribou elements (MNI = 1) represented all but the trunk region. The combined goose material (MNI = 2) represented the trunk, pelvic and pectoral limb areas, with 66.67% of the material falling into the trunk area. With a little imagination the thoracic vertebrae, sternum and furculum fragments could be interpreted to represent the well-developed chest muscle or "breast" of this large flying bird, accompanied by the upper leg or "drumstick", and the upper half of the wing. Analysis of the combined duck material was not particularly illuminating.

Modern natural history records indicate that all three analytical units contained species which were available near the site throughout the year. The presence of harp seals, juvenile seals, double-crested cormorant and to a lesser extent, Canada goose, exhibited a clustering of species available for exploitation during a period from late February until roughly the beginning of September. The fact that adult and immature harp seals could have been available on their southward migration cannot be ignored, which would extend the period of potential exploitation to include late December; however, it was considered more likely that this species would have been pursued during the period from late February until the beginning of April when it would usually be more easily obtained.

The Beaches faunal sample exhibited a strong marine orientation. While the variety of identified species represented a wide range of habitats, some portion of the range in which each species lived overlapped at the coast. The inner coastal zone represented some portion of the habitat of the majority of identified species. Furthermore, there is an impression that the inner coastal zone may have provided the greater portion of the volume of resource represented in the faunal assemblage. It is not known how much of the identified Phocidae material came from harp seals. MNI analysis indicated the presence of at least one adult sized harp seal in each of the three analytical units, plus an additional immature harp seal individual in N34.50W24.00. Only nine fragments could be positively identified as harp seal within the entire site sample.

Less than 4% of the entire faunal assemblage exhibited some form of alteration, and all these specimens came from the midden feature 4 (N33.58W24.42 and N34.50W24.00). Heat exposure was the most common form of alteration but only affected 1.42% of the entire faunal assemblage. An additional 1.22% of the entire faunal assemblage exhibited spiral fracturing. Among the identified sample, only 9 specimens exhibited some form of alteration. Caribou was the most frequently affected species, with 6 long bone fragments exhibiting spiral fracturing. Overall, it did not appear that heat exposure or any other form of alteration, had a significant affect on the preservation of the faunal material in the midden feature.

Overall, the two largest analytical units (N33.58W24.42 and N34.50W24.00) exhibited similar patterns in their faunal samples. The two units exhibit a similar list of identified species, indicators for season of exploitation and habitats exploited. Only harp and harbour seal fragments could be identified within the tiny Test Pit 11 assemblage. In general, body region analysis was of very limited usefulness, highlighting just how small the entire site assemblage was, rather than suggesting how various animal species were handled. Analysis suggested that the excavated units represented the processing of entire juvenile seals; however, the paucity of immature$^{+}$/adult seal material made it difficult to assess the processing of adult sized seals.

# CHAPTER 10

## Interpreting the Inspector Island and Beaches Site Functions: Evaluating the Faunal Evidence in Conjunction with Other Site Data

This chapter will review the non-faunal data in conjunction with the new faunal information from the Inspector Island and Beaches sites in order to interpret possible site function. In particular, the faunal data will be examined to see if it supports the reconstruction of the site function of these two sites which was previously based on non-faunal evidence. Current general theories regarding Little Passage settlement and subsistence will be reviewed in light of the largest Little Passage faunal collections yet to be recovered. Finally, given this concrete evidence of Little Passage subsistence, there will be a brief discussion of how this system may have been affected by a European presence in Newfoundland.

### 10.1 Inspector Island

As presented in Chapter 4, Little Passage settlement data suggest this inner coastal site was occupied in the summer for the purpose of exploiting a variety of marine resources (Schwarz 1994). The geographical location of the site, resources accessible to the site, excavated archaeological record and lithic assemblage suggest that the Inspector Island site fulfilled the role of a central exploitation camp as defined by Schwarz (1984). To review, a central exploitation camp would be located in a coastal position from where several potential resources, not necessarily in the immediate vicinity, could be monitored and exploitation expeditions could be mounted in several directions. Current resource distributions, suggest that the site's location half-way between the Newfoundland shore and outer coastal zone would have allowed the site's inhabitants to monitor the migratory harp seal population, which represented a major resource concentration. As well, the site would have been a convenient location to harvest local inner coastal resources such as other large marine mammals like harbour seals and whales, as well as nesting seabirds, bird eggs, shellfish and marine fish species.

The Little Passage component consisted of two distinct levels of occupation indicating it was occupied on at least two separate occasions. The more recent level contained two virtually contemporaneous hearth features. A midden feature was also excavated, producing most of the faunal sample analyzed for this thesis. Overall, an "extensive" living area was indicated. There was no evidence of Little Passage structures and so it was suggested that temporary shelters such as tents may have been used at the site. The fact that the descendent Beothuk occupants of the site left a tent ring feature (Feature 3) lends some support for the use of tents at the site.

The Little Passage lithic assemblage from Inspector Island only roughly resembles that predicted for the central exploitation camp, that is, a low frequency of projectile points, a relatively high proportion of large bifaces and an absence or low frequency of other tool types and absence or low frequency of evidence of tool manufacture (Schwarz 1984). While bifaces were the most frequently occurring tool form in the Little Passage component of Inspector Island's lithic assemblage, projectile points occurred with almost equal frequency. As predicted, the tools usually associated with hide preparation such as scrapers and flake tools, were only represented by single specimens. Unlike the predicted assemblage, the number of cores (6) and linear flakes (2) plus a few core fragments and thinning flakes indicated that tool manufacture and maintenance did occur on site.

In general, it appears that the Inspector Island faunal assemblage supports the central exploitation camp role predicted for the site as outlined above. The faunal sample analyzed for this thesis indicates the exploitation of a wide variety of species. Since it was predicted that the site location was picked in order to allow the monitoring of several potential resources, it is not surprising that more than one species is represented in the assemblage. The following species were identified: beaver, red fox, black bear, pine marten, river otter, harbour seal, harp seal, caribou, an unknown whale species, cf. Canada goose, white-winged scoter/common eider, red-breasted merganser, some species of auk or razorbill, black guillemot, rainbow smelt, Atlantic cod, shorthorn sculpin, cf. longhorn sculpin, soft-shell clam and blue mussel. This long list is tempered by the fact that most of these species were represented by only one or two individuals per analytical unit. Although the range of species is wide, it is a bit surprising that the quantity and variety of seabird and marine fish species is not greater given the huge potential of species available in the area. It has been demonstrated that the preservation conditions in the midden feature were good, allowing the recovery of tiny smelt elements in good condition. Thus it is believed that other fish material was not lost due to decomposition within the midden sample. Perhaps more fish species were deposited elsewhere on the site or fish were not the focus of attention at Inspector Island.

It is interesting to note that the rainbow smelt remains may indicate that a relationship existed between the Inspector Island site and the Boyd's Cove site. Both sites contain Little Passage and Beothuk components but they have not produced contemporaneous carbon dates. However, today the only source of smelt in eastern Notre Dame Bay is at Boyd's Cove in Indian Brook. Furthermore, the archaeological smelt remains are almost all post-cranial elements suggesting that this fish was processed somewhere else and consumed at Inspector Island.

The same explanations of offsite processing could be proposed in the case of the exploitation of bird species. Alternatively, it is suggested here that perhaps intensive bird exploitation may have taken the form of egg collecting. The historic literature refers to the Beothuk collecting large quantities of eggs from the large concentrations of seabird colonies located in the bays of Newfoundland and major bird islands. It was reported that the contents of the eggs were dried and stored in considerable quantities to supplement the Beothuk diet throughout the winter. I do not know if egg shell could be expected to have survived in a recognizable form in the midden feature of Inspector Island. It is possible that if this material was part of the subsistence activities of the site, the shell material was disposed of elsewhere on the site or the eggs were processed off site.

With the exception of the harp seal which represents exploitation of the outer coastal ecozone, all the species identified could have been obtained in the inner coastal region of Notre Dame Bay. This phenomenon was predicted based on site location and knowledge of the resources available today in the immediate vicinity of the site. Furthermore, while the assemblage contained species which could have been obtained throughout the year, the minimum period of the year that would account for all the faunal seasonal indicators was from late February to the end of June. This seasonality information supports the overall pattern of Schwarz's and others models that predicted that coastal resources would have been focused on during the spring and summer months. While the presence of harp seal remains definitely indicates occupation of the site during winter weather conditions (which falls in the later winter and early spring months), there was also evidence for faunal exploitation during the relatively warmer months of May and June. The most specific indicator of season of exploitation was the presence of juvenile harbour seal material that is usually only available from May until sometime in July. The indication of faunal procurement during the warmer months would lend support to the suggestion that sometimes the site was occupied during milder times of the year when tents would have provided sufficient shelter. Also, if harp seals were not intensively sought after, as suggested in the following paragraphs, then temporary shelter during a short expedition after harp seal may have been adequate even in the sometimes bitter weather conditions of late February and March.

It was predicted that given the site's position half-way between the mainland and the outer coastal zone, harp seal would have been one of the major resources to be monitored from here. However, harp seal and the outer coastal zone, did not appear to be the major focus of exploitation of the Little Passage people. Harp and harbour seal material were essentially equally represented within the sample. In terms of the number of individuals present and the amount of meat, fat, organs, bone and hide which they represented, the combined seal category made up the majority of the volume of resource represented by the entire faunal assemblage.

The small sample size and high frequency of elements which could only be identified to "seal" required that body region analysis be conducted on the lumped seal category. Certainly if there was any difference in the treatment of the two species this difference was lost in the lumping process. Keeping that drawback in mind, body region analysis did suggest that some patterning existed. Distributions of elements indicated that whole juvenile seals were being processed at the site but that adult sized seals of both species were not represented in the areas of the fore and hind limbs. Some possible explanations for the absence of adult limb elements were presented in section 7.1.1. These explanations are summarized below.

It was suggested that in the case of the seal forelimb, the shoulder and upper arm disarticulate easily from the seal carcass to create a neat, but substantial "package" of meat which would be easy to transport away from the site. It was suggested that these missing elements might be found at the hypothesized coastal base camp associated with this site. Secondly, it was suggested that perhaps these marrow bearing elements were being processed for the purpose of grease extraction analogous to that process carried out by the Naskapi-Montagnais of Labrador, although this native group used caribou long bones instead of seal. There is evidence to suggest that this marrow extraction process was being carried out in Newfoundland. Historic Beothuk sites and one Recent Indian site exhibit pit features similar to those produced by the Naskapi-Montagnais in the process of grease extraction. Furthermore, it has been established that there is a common ancestral tie between the Naskapi-Montagnais and the Beothuks suggesting the two groups would have some shared cultural practices. The grinding of seal long bones during this process would effectively remove these elements from the identifiable faunal assemblage. Finally, it is also possible that these elements were being disposed of in an, as yet, unexcavated portion of the site.

This patterning of seal body regions does not conflict with the site's tool assemblage. Although scrapers and tools that could perform hide preparation functions are probably under-represented, the presence of a relatively high proportion of bifaces to scrapers and projectile points suggests that the Inspector Island was a butchering site. There was no accompanying pattern of cut marks to support any interpretation of butchering patterns that may have existed at the site. The presence of 6 cores accompanied by a small number of flakes, suggest that tool manufacture and possibly maintenance, was occurring on the site, perhaps while the site's inhabitants waited for prey to arrive. Certainly if several seal individuals were being butchered, the Little Passage bifaces would have had to be sharpened. Alternatively, perhaps the site was on the way to or from a desirable source of lithic material.

While the Inspector Island faunal assemblage was represented by at least two separate periods of occupation, comparison of the samples indicated that there was no significant change over time in the types of animal species exploited, the econiches exploited, the seasons in which they were exploited or the manner in which the various species were treated.

Overall, the new faunal data from the Inspector Island site helped to flesh out the proposed site function and means of subsistence as it was reconstructed based on indirect evidence. As was expected the Little Passage inhabitants appeared to focus on marine resources for their means of subsistence during at least the spring and summer seasons. The potentially great harp seal resource did not dominate the faunal assemblage, instead this species appeared to share an equally significant role with harbour seal. However, a very small sampling of seabird and marine fish species were identified given the wide range of species known to exist in some concentration in the surrounding area. The faunal data support Schwarz's (1994) generalized subsistence model for the Little Passage complex that proposed that while these people made use of the huge resource represented by harp seals they did not run the risk associated with depending greatly on this species.

## 10.2 The Beaches

As was the case for the Inspector Island site, Little Passage settlement data predicted this inner coastal site was occupied in the summer for the purpose of exploiting a variety of marine resources. The non-faunal data suggest that the Beaches site fulfilled the role of a coastal base camp or possibly the combined role of coastal base camp/central exploitation camp. To review, Schwarz proposed that a coastal base camp would be located in the inner coastal zone near or on prime access routes to the interior and be typified by a tool assemblage reflecting a variety of activities occurring on site. The camp's location would have been chosen for the availability of a wide variety of resources in the immediate area for the use of individuals left at the camp while others were at special procurement sites. The hypothesized central exploitation camp was described in the previous section.

While the Beaches site is located in the inner coastal zone of Bonavista Bay it is not very far (less than 10km), or very difficult to get to the shores of the outer coastal islands. The site is also about half way by boat (roughly 30km) between two navigable water ways providing access into the interior. These two waterways, the Terra Nova River and Lake, to the south, and Gambo Pond to the north, are known for their populations of trout and salmon and for their caribou crossings. So the Beaches could provide a point from where resources in the inner and outer coastal zones and, less conveniently, the coastal interior, could be monitored.

So far only two midden features have been excavated within a Little Passage context. The site has yet to produce any other type of Little Passage feature or living context. We know the site has been occupied by all the different human populations known to have lived in Newfoundland, including all three Recent Indian complexes. The site's Recent Indian midden Feature 4 has produced radiocarbon dates spanning over a four hundred year period. In the late 1800s the site was known to possess at least 19 house pit features. Now it can only be assumed that they were all Beothuk features since only 8 house pits remain. The evidence suggests that there was probably a substantial Little Passage component to the site as part of a basically continuous Recent Indian usage of the site.

The small Little Passage lithic assemblage most closely represents that predicted for a coastal base camp. There are projectile points, triangular bifaces, scraper forms, cores and thinning flakes but they all occur in very low frequencies. The variety of lithics can be considered to represent a variety of activities which are hypothesized to have taken place at a typical coastal base camp.

The identified faunal assemblage did reflect the exploitation of a variety of animal species almost all of which could have been obtained in the immediate vicinity of the site by those individuals left at the camp. The following animals were identified: beaver, pine marten, river otter, cf. wolf, harbour seal, harp seal, caribou, double-crested cormorant, Canada goose, common raven, cf. eider/scoter, gull species, Atlantic cod, longhorn sculpin and soft-shell clam. Each analytical unit contained a single individual for each identified species, with the exception of harp seal, harbour seal, Canada goose and eider duck which were identified by one or two individuals per unit. Shellfish was present in some quantity. The shell was not collected in a manner which could measure exactly what was in the midden. The fact that some of the shell was heat exposed and that the shell occurred in dumps and layers indicates that it represents a resource used by the Little Passage inhabitants and not just detritus off the beach.

With the exception of harp seals, all the species identified could have been obtained near the Beaches site, either in the ocean or the adjacent forests. Harp seals would have been obtained in the outer coastal zone. While a variety of habitats may be represented, the majority of the material still represents a marine orientation. Looking at the representation of all species present in terms of MNI values, seals again dominated the faunal assemblage. Although harp and harbour seals were represented in equally low numbers, these relatively large animals did comprise the largest proportion of the volume of faunal resources represented in the entire site's faunal assemblage. In other words, these individuals would have provided the bulk of the meat, hide, fat and bone represented in the Little Passage middens.

If the Beaches site fulfilled a base camp function the identified assemblage did not exhibit, as might be expected, a greater volume of material coming from terrestrial and freshwater habitats. It might be expected that a base camp would exhibit more caribou or salmon or beaver given that the site would be drawing upon a greater variety of habitats as the produce from special exploitation camps was brought back to the base camp. It is interesting that the MNI value for caribou and beaver for the entire site is two and one respectively. Although fish remains were recovered, none of it could be identified. While it is possible that the evidence for these interior habitats was disposed of elsewhere on the Beaches site, it is likely that these interior species were being processed at the hypothesized special exploitation camps. The remaining body parts brought back to the Beaches site may well have been perishable materials such as meat, fat and hides rather than bone and antler.

There are several species present which could have been available to the Beaches site inhabitants anytime throughout the year. However, the minimum period of exploitation which would account for all the identified species, was from late February to the end of June. There were no species identified which could only be obtained in the fall or early winter.

The small size of the faunal sample made analysis of body region patterning virtually impossible. There was some indication that all body regions of juvenile and immature seals were present but adult seal material was almost non-existent despite indications that each analytical unit contained at least two adult sized seals. While the small faunal sample size suggests that the collection is not particularly representative of the entire site assemblage, it is possible the pattern of adult seal was a real phenomenon. Maybe the adult size seals were being processed somewhere other than the Beaches site. There were no cut marks on seal elements to indicate methods of butchery. In terms of human alteration of faunal material, it is worth noting that 6 of the 11 caribou fragments present in the entire site assemblage, were long bone fragments exhibiting spiral fracturing. Spiral fracturing is usually an indication of the intentional breakage of long bones for the purpose of marrow extraction. Caribou was the only species to exhibit this form of alteration and the only species to exhibit a chopping mark.

To summarise, the Beaches faunal assemblage most closely resembled Schwarz's (1994) proposed spring and summer coastal occupation with its marine focus. The combined harp and harbour seal material represented the greatest portion of the total volume of faunal material. The two seal species appeared to be present in virtually equal volumes. It was a bit unexpected that such a small sampling of the potential array of seabirds, waterfowl and marine fish was represented in the faunal assemblage. While the assemblage contained a variety of species representing the interior habitats of Newfoundland the fact that these species were represented by MNI of one and low NISP suggests these species were processed elsewhere and so little mateiral was brought back to the Beaches site to eventually become part of the archaeological record.

### 10.3 General Little Passage Settlement and Subsistence Theory in Light of the New Faunal Evidence

Although the sample sizes, especially the identifiable samples, from the Inspector Island and the Beaches sites were quite small, they still represent the largest faunal assemblages from Little Passage context yet available. As such, these two assemblages provide the most substantial pieces of direct evidence for Little Passage subsistence available to date. At the least, the original research portion of this thesis provided the raw data in the form of a list of identified species, for researchers to use in their interpretation of these two Little Passage sites. This raw data provided the opportunity to test current Little Passage settlement and subsistence theory with new direct evidence of Little Passage subsistence.

Given the small size of each faunal assemblage, there was a question of how representative each sample was of its own site, let alone, how representative the samples would be of the greater Little Passage annual subsistence cycle in Newfoundland. Comparing the results of the analysis of the faunal assemblages from these two sites has increased my confidence in the representativeness of the assemblages. The faunal samples from the two sites exhibit a great deal of similarity despite coming from sites that were separated by a great distance, that were located in different major bay systems, on different shores of Newfoundland and that were probably occupied by different Little Passage communities. The two sites exhibit virtually the same list of identified species, exploitation of the same inner coastal zone with concentration on marine oriented species and the same minimum season of exploitation (late February to the end of June). Together, harp and harbour seals dominated each site assemblage; the two species represented roughly equal volumes of resource within each site assemblage and together contributed the major portion of the total volume of faunal resources to each site assemblage. Given these similarities it was concluded that these two sites exhibited a real pattern of exploitation rather than an artifact of archaeological sampling.

So far, the available faunal data continue to support the theory that the people of the Little Passage complex practised a generalized hunting and fishing strategy. The present faunal data indicate that the Little Passage population was not on the coast all year round. The faunal data indicated that these coastal sites were used during a period from late February to at least the end of June, however this need not have been a continuous period of occupation. Although there were species present in the faunal assemblage which could have been obtained throughout the year, there were no species present which could only be obtained in the fall or first half of the winter. This information regarding season of exploitation still leaves room for the fall and early winter occupation of the Newfoundland interior in order to exploit interior resources such as caribou and beaver as has been hypothesized based on analogy to Fitzhugh's reconstruction of the contemporary Point Revenge complex in Labrador (Pastore 1989b; Fitzhugh 1972:158-159; 1978:169) and Recent Indian settlement data from Newfoundland (Schwarz 1994).

While the two sites under discussion were located in the inner coastal zone interior resources did not appear to comprise a significant portion of the volume of faunal resource represented by the assemblage. It had been predicted prior to the analysis of these faunal samples that the Little Passage coastal sites were located in the inner coastal zone in order to exploit inner coastal resources as well as to continue to have access to interior resources (Pastore 1989b). If this was the case the interior resources did not show up with any significance in the analyzed sample. It is possible that large animals such as caribou or bear were processed where they were caught and the portions of these animals that were brought back to the inner coastal sites did not contain bones which would show up in the archaeological record. It is also possible that evidence for the usage of interior resources was disposed of elsewhere on the site.

As expected, the positioning of Little Passage sites within the inner coastal zone appeared to be for the purpose of exploiting inner coastal resources. With the exception of harp seal, all the species identified at these two inner coastal sites could be obtained within in the inner coastal zone. However, in terms of volume of resource represented by the recovered faunal material, the outer coastal species, harp seal, definitely contributed a significant proportion of the faunal resources but perhaps not as large a proportion as has been predicted based strictly on regional availability of resources. Harp and harbour seal material appeared to make an equal contribution to the total faunal resources exploited. Together these two species probably represented over 75% of the total volume of faunal resources represented in each faunal assemblage. The advantage of a generalized subsistence strategy would be that if a major species failed to appear at the expected time during the annual subsistence round, it would not have a devastating affect on the human population (Pastore 1989; Schwarz 1994; Tuck and Pastore 1985). As represented by the current faunal data, the failure of the harp seal hunt would have had a significant effect on how the Little Passage population directed their coastal subsistence activities. Instead of the two seal species contributing a virtually equal amount of resource, harbour seal would become the major animal resource and would be exploited more intensely. However, if both seal species were unavailable, this would require a dramatic change in how and where the Little Passage community made up the major portion of their faunal needs.

It must be kept in mind that the significance of the harp seal component in relation to the entire years supply of food may be greatly under-represented because it is possible that individuals were subjected to primary butchering at a site more convenient to where the harp seal herds were intercepted. It is possible that most of the harp seal skeletal material was left at a primary butchering site such as the special exploitation camp type proposed by Schwarz.

As already reviewed in sections 10.1 and 10.2, the new faunal data do not conflict with the model of the three Little Passage site forms proposed in

Schwarz's version of a generalized Little Passage economy (Schwarz 1984). Based on site location and lithic assemblages, it was hypothesized that the Beaches site fulfilled the role of a coastal base camp while Inspector Island site fulfilled the role of a central exploitation camp. The faunal assemblages from these two sites fit in with the proposed site functions. The faunal data also support Schwarz's (1994) proposal that inner coastal sites were occupied during the summer in order to exploit a variety of marine resources. The data also suggest that the inner coastal sites may have been visited periodically during the late winter and spring as well. There is no reason to believe the sites were occupied continuously from late winter until the end of summer. Perhaps the non-summer indicators represent forays to the coast from the near coastal interior sites during the winter or the activities of individuals passing through the inner coastal zone in the spring on the way to the outer coastal zone in the pursuit of harp seals.

In conclusion, the new faunal data presented here represent the two largest Little Passage faunal assemblages yet to be recovered. The two assemblages from two different areas of northeast Newfoundland exhibited very similar patterns of faunal exploitation. The results of the faunal analysis lend concrete support to the current theory of Little Passage settlement and subsistence previously reconstructed based on site location, proximity to resources, site structure and lithic assemblages. It appears that inner coastal sites in northeastern Newfoundland were visited during the late winter and into the summer in order to exploit inner coastal resources and the harp seal of the outer coastal zone. The present faunal assemblages suggest that harbour seal and harp seal were equally important resources and together appeared to have comprised the major portion of the faunal supplies obtained during the occupation of the inner coast sites.

This discussion would not be complete without making at least a brief reference to the implications of the current research for our understanding of the Beothuk. As outlined in Chapter 2, it has been established through the archaeological and ethnographic records that the Little Passage complex is directly ancestral to the historic Beothuk population of Newfoundland. The Beothuk were the native people occupying Newfoundland when Europeans arrived on the northeast coast of North America. Unlike other native North American populations, the Beothuk did not develop a successful means to cope with the presence of Europeans. There are a few records scattered through the first two centuries of contact, of Europeans trading and having positive contact with members of the Beothuk. However, by the end of the seventeenth century, the Beothuk appeared to have chosen to withdraw from areas frequented by Europeans rather than have continual contact. As the European presence in Newfoundland expanded, the Beothuk appeared to have moved northward and eventually withdrew into the Newfoundland interior. Shawnadithit, the last known Beothuk, died in 1829. Pastore (1987; 1989b; 1992) provides the most current and complete analysis of how and why the Beothuk population died out.

It is currently accepted that the presence of the European migratory fishery in the spring and summer and then permanent European settlement of the Newfoundland coast would have interfered with the traditional seasonal round of the Beothuk. Early historic records indicate that the Beothuk spent the spring and summer on the coast collecting large quantities of food supplies which sustained them through the summer and which were also preserved in order to be stored for consumption during the leaner winter months. These coastal supplies supplemented the caribou which were obtained in the fall and winter in the Newfoundland interior. It is believed that in order to avoid conflicts with Europeans the Beothuk withdrew into the Newfoundland interior and were effectively cut off from their traditional access to the coastal resources. When the caribou migrated to the southern barrens of Newfoundland they too became unobtainable as the Beothuk were intimidated by the Micmac presence on the southern portions of Newfoundland ( Pastore 1992:60). Eventually, as settlers made their way further into the interior to trap fur, hunt caribou and cut lumber, the Beothuk were forced to compete for the inherently sparse interior resources. It was not a sustainable existence.

The new faunal data presented here provide concrete support for the significance of the coastal portion of the Little Passage/Beothuk seasonal round. The data indicate that traditionally the Beothuk were on the coast during a minimum period of five months. The period probably began in late February or early March and lasted until at least July. Early on in the historic period the arrival of the European summer fishery would have had some effect on the traditional Beothuk spring and summer subsistence pattern. If the Beothuk could not coexist with Europeans on the Newfoundland coast, interference with or loss of the coastal portion of the seasonal round would have had serious ramifications. Not only would the Beothuk have been prevented access to their summer livelihood but also from putting stores aside to supplement the less plentiful resources available in winter in the Newfoundland interior. By providing the faunal assemblages, the Inspector Island and Beaches sites have confirmed some of our current thoughts regarding the effect of the European presence in Newfoundland on the "traditional" Beothuk way of life.

# REFERENCES


Austin, S.

1980 Cape Cove Beach (DhAi-5,6,7). Newfoundland Prehistoric Cultures. Unpublished Master's thesis, Department of Anthropology, Memorial University of Newfoundland, St. John's.

1984 "Maritime Archaic and Recent Indian Evidence from Cape Cove Beach, Newfoundland." Canadian Journal of Archaeology 8(2):115-127.

Beck, Brian

1983 Underwater World: The Harbour Seal in Canada. Department of Fisheries and Oceans, Ottawa.

Bowen, W.D.

1989 Underwater World: The Harp Seal. Department of Fisheries and Oceans, Ottawa.

Bruce, W. J.

1975 Some Aspects of the Biology of Landlocked Smelt, Osmerus mordax (Mitchell 1815) in Selected Avalon Peninsula Lakes. Unpublished Master's thesis, Department of Biology, Memorial University of Newfoundland, St. John's.

Burrows, R.

1989 Birding in Atlantic Canada: Newfoundland. Jesperson Press Limited, St. John's.

Cameron, A. W.

1958 Mammals of the Islands in the Gulf of St. Lawrence. National Museum of Canada Bulletin No. 154, Ottawa.

Carignan, P.

1975 "The Beaches: A Multi-Component Habitation Site In Bonavista Bay." National Museum of Man, Mercury Series Archaeological Survey of Canada, Paper 69.

1973 Archaeology of Bonavista Bay, Salvage Report 1973. Report on file, Historic Resources, Newfoundland, St. John's.

Chafe, L.G.
1923 Chafe's Sealing Book. The Trade Printers and Publishers, Ltd., St. John's.

Chaplin, R.
1971 The Study of Animal Bone From Archaeological Sites. Seminar Press, New York.

Comeau, P. A.
1989 Underwater World: Sealing, A Canadian Perspective. Department of Fisheries and Oceans, Ottawa.

Cridland, J.
1991 The Beaches Site (DeAk-1) Preliminary Faunal Report: Analysis of Material Excavated During the 1989 and 1990 Field Seasons. Report on file, Burnside Heritage Project, Burnside, Newfoundland.

Cumbaa, S.
1984 "Divers Furres and Deeres Flesh" - Animal Use by a 17th Century Beothuk Population at Boyd's Cove, Notre Dame Bay, Newfoundland. Unpublished report on file Archaeology Unit, Memorial University of Newfoundland, St. John's.

Department of Fisheries and Oceans
1984 Underwater World: Atlantic Pelagic and Diadromous Fish. Department of Fisheries and Oceans, Ottawa.

Devereaux, H.
1969 Five Archaeological Sites In Newfoundland: A Description. Report on file, Newfoundland Historic Resources, St. John's.

1970 A Preliminary Report On The Indian Point Site, A Stratified Beothuk Site. Report on file, Newfoundland Museum, St. John's.

Evans, O.
1981 "1980 Field Report of Frenchman's Island Project." Archaeology In Newfoundland and Labrador 1:88-94.

Fitzhugh, W.
1972 Environmental Archaeology and Cultural Systems in Hamilton Inlet, Labrador. Smithsonian Contributions to Anthropology, No. 14, Washington, D.C.

1974 "Winter Cove 4 and the Point Revenge Occupation of the Central Labrador Coast." Arctic Archaeology 15(2):146-174.

Gilbert, W.
1995 Russell's Point, 1994: A Report on the Russell's Point Archaeology Project. Report on file, Historic Resources Branch, St. John's.

1996 Baccalieu Trail Archaeology Project, 1995 Phase 2: Russell's Point. Report on file, Historic Resources Branch, St. John's.

Godfrey, W. E.
1986 The Birds of Canada. National Museum of Canada, Ottawa.

Gordon, J. and T. E. Weeks
1982 Seashells of the Northeast Coast from Cape Hatteras to Newfoundland. Hancock House Publishers Limited, Surrey.

Hawkins, C.
1985 Underwater World: The Soft-shell Clam. Department of Fisheries and Oceans, Ottawa.

Hesse, B. and D. Perkins
1974 "Faunal Remains from Karatas-Semayuk in Southwest Anatolia: An Interim Report." Journal of Field Archaeology 1:149-160.

Hewson, J.
1978 Beothuk Vocabularies: A Comparative Study. Technical Papers of the Newfoundland Museum, No. 2. St. John's.

Honacki, James H., Kenneth E. Kinman and James W. Koeppl, editors
1982 Mammal Species of the World: A Taxonomic and Geographic Reference. Allen Press, Inc. and The Association of Systematics Collections, Lawrence, Kansas.

Howley J. P.
1980 The Beothucks or Red Indians: The Aboriginal Inhabitants of Newfoundland. Coles Publishing Company Limited, Toronto.

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

Lear, W.H.
1984 Underwater World: Atlantic Cod. Department of Fisheries and Oceans, Ottawa.

Lien, J.
1985 Wet and Fat: Whales and Seals of Newfoundland and Labrador. Breakwater Books, St. John's.

Loring, S.
1985 "Archaeological Investigations into the Nature of the Late Prehistoric Indian Occupation in Labrador: A Report on the 1984 Field Season." Archaeology in Newfoundland and Labrador 5:122-153.

1989 "Tikkoatokak (HdCl-1): a late prehistoric Indian site near Nain." Archaeology in Newfoundland and Labrador 7:52-71.

MacLean, L.
1990 Final Report of a 1989 Archaeological Survey in Bonavista Bay. Report on file, Newfoundland Historic Resources Division, St. John's.

1991a Burnside Heritage Project Archaeology Report for Summer, 1990. Report on file, Newfoundland Historic Resources Branch, St. John's.

1991b The Beaches Revisited: New Aspects of the Early Beothuk Period in Bonavista Bay, Newfoundland. Unpublished Manuscript on file with author, St. John's, Newfoundland.

Mansfield, A. W.
1964 Seals of Arctic and Eastern Canada. Fisheries Research Board of Canada Bulletin No. 137, Ottawa.

Montevecchi, W.A. and L.M. Tuck
1987 Newfoundland Birds: Exploitation, Study Conservation. Nuttall Ornithological Club, Cambridge.

Nelson, Joseph S.
1984 Fishes of the World, 2nd edition. John Wiley & Sons, Toronto.

Nhwani, L. B.
1973 Growth, Mortality, Population Structure and Spawning Biology of Stocks of the Atlantic Smelt *Osmerus mordax* (Mitchell) in Newfoundland. Unpublished Master's thesis, Department of Biology, Memorial University of Newfoundland, St. John's.

Pastore, R.
1984 "Excavations at Boyd's Cove, Notre Dame Bay 1983." Archaeology in Newfoundland and Labrador 4:126-141.

1985 "Excavations at Boyd's Cove - 1984: A Preliminary Report." Archaeology in Newfoundland and Labrador 5:322-337.

1986 "The Spatial Distribution of Late Palaeo-Eskimo Sites on the Island of Newfoundland." In Palaeo-Eskimo Cultures in Newfoundland, Labrador and Ungava, pp. 125-133. Memorial University of Newfoundland, St. John's.

1987 "Fishermen, Furriers, and Beothuks: The Economy of Extinction." Man in the Northeast 33:47-62.

n.d. <u>Excavations at Inspector Island, 1987</u>. Unpublished Report on file, Archaeology Unit, Memorial University of Newfoundland, St. John's.

1989a "Report for Permit No. 86-16: Inspector Island (DiAl-l)." <u>Archaeology in Newfoundland and Labrador</u> 7:260-269.

1989b "The Collapse of the Beothuk World." <u>Acadiensis</u> XIX(1):52-71.

1992 <u>Shanawdithit's People: The Archaeology of the Beothuks.</u> Atlantic Archaeology Limited, St. John's.

Penney, G.

1981 "A Preliminary Report on the Excavation of the L'Anse a Flamme Site (CjAx-1)." <u>Archaeology in Newfoundland and Labrador</u> 2:94-110.

1985 <u>Prehistory of the Southwest Coast of Newfoundland</u>. Unpublished Master's thesis, Department of Anthropology, Memorial University of Newfoundland, St. John's.

1987 <u>An Archaeological Survey of King George IV Lake, submitted to Conne River Band Council</u>. Report on file, Newfoundland Historic Resources Branch, St. John's.

1990 Site Form for DaBj-1. On File, Newfoundland Historic Resources Branch, St. John's.

Peters, H. S. and T. D. Burleigh

1951 <u>The Birds of Newfoundland</u>. Department of Natural Resources, Province of Newfoundland, St. John's.

Renouf, M. A. P.

1991 <u>Archaeological Investigations at the Port au Choix National Historic Park: Report of the 1990 Field Season.</u> Report on file, Archaeology, Atlantic Region Canadian Parks Service, Halifax.

1992 The 1991 Field Season, Port au Choix National Historic Park: Report of Archaeological Excavations. Report on file, Archaeology, Atlantic Region Canadian Parks Service, Halifax.

1993 The 1992 Field Season, Port au Choix National Historic Park: Report of Archaeological Excavations. Report on file, Archaeology, Atlantic Region Canadian Parks Service, Halifax.

Reynolds, K.
1996 Archaeological Site Record Form for CjBj-10. Report on file, Newfoundland Historic Resources Branch, St. John's.

1996 Archaeological Site Record Form for CjBj-11 Report on file, Newfoundland Historic Resources Branch, St. John's.

Robbins, D.
1982 "Preliminary Report on the Stock Cove Site (CkAl-3)." Archaeology in Newfoundland and Labrador 2:190-209.

Roberts, B.
1983 "Soils." In Biogeography and Ecology of the Island of Newfoundland, edited by G. Robin South, pp. 107-161. Dr. W. Junk, Hingham, Massachusetts.

Ronald, K. and J. L. Dougan
1982 "The Ice Lover: Biology of the Harp Seal (*Phoca groenlandica*)." Science 215:928-933.

Rowley-Conwy, P.
1990 "Settlement Patterns of the Beothuk Indians of Newfoundland: a View from Away." Canadian Journal of Archaeology 14:13-32.

Schwarz, F.
1984 The Little Passage Complex in Newfoundland: A Comparative Study of Assemblages. Unpublished Honours Thesis, Department of Anthropology, Memorial University of Newfoundland, St. John's.

1987 Gambo Pond Point-Terra Nova Lake Survey. Report on file, Newfoundland Historic Resources Branch, St. John's.

1988 Gambo II: A Report on Excavations Conducted at Five Prehistoric Sites on Gambo Pond, July - August 1988. Report on file, Newfoundland Historic Resources Branch, St. John's.

1992 Archaeological Investigations in the Exploits Basin: Report on the 1992 Field Survey. Report on file, Newfoundland Historic Resources Branch, St. John's.

1994 "Paleo-Eskimo and Recent Indian Subsistence and Settlement Patterns on the Island of Newfoundland." Northeast Anthropology 47:55-70.

Scott, W.B.
1981 Freshwater Fishes of Eastern Canada. University of Toronto Press, Toronto.

Simpson, D.
1986 Prehistoric Archaeology of the Port au Port Peninsula, Western Newfoundland. Unpublished Master's thesis, Department of Anthropology, Memorial University of Newfoundland, St. John's.

Stewart, F.
1971 Faunal Analysis of the Indian Point Site, Red Indian Lake, Newfoundland. Report on file, Archaeological Survey of Canada, Ottawa.

Threlfall, W.
1983 "Seabirds." In Biogeography and Ecology of the Island of Newfoundland, edited by G. R. South, pp. 467-508. Dr. W. Junk, Hingham, Massachusetts.

Tuck, J.
1982 "Prehistoric Archaeology in Atlantic Canada Since 1975." Canadian Journal of Archaeology 6:201-218.

Tuck, J. and R. Pastore
1985 "A nice place to visit but...Prehistoric human extinctions on the Island of Newfoundland." Canadian Journal of Archaeology 9:69-80.

Turgeon, Donna D., A. E. Bogan, E. V. Coan, W. K. Emerson, W. G. Lyons, W. L. Pratt, C. Roper, A. Scheltema, F. G. Thompson and J. Williams
1987 Common and Scientific Names of Aquatic Invertebrates from the United States and Canada: Mollusks. American Fisheries Society, Special Publication 16.

# APPENDIX A

## Catalogue of Identified Specimens from the Inspector Island Site (DiAq-2)

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| N3E3 NEQ L5 15/8/82 | B161 | R. tarandus | phalanx middle | I+ | 1 |
| N3E3 NEQ L5 15/8/82 | B162 | F. Phocidae | phalanx prox or middle | I+ | 1 |
| N3E3 NEQ L5 15/8/82 | B163 | F. Cervidae, cf. R. tarandus | metapodial | I+ | 1 |
| N3E3 NEQ L5 15/8/82 | B164 | F. Alcidae cf. Alca or Uria sp. | humerus | I+ | 1 |
| N3E3 NEQ L5 15/8/82 | B165 | R. tarandus | phalanx prox 2 or 5 (dew hoof) | I+ | 1 |
| N3E3 NEQ L5 15/8/82 | B166 | F. Phocidae | phalanx middle | I | 1 |
| N3E3 NEQ L5 15/8/82 | B167 | F. Phocidae (P. vitulina not cf.?) | tooth, canine | I+ | 1 |
| N3E3 NEQ L5 15/8/82 | B168 | F. Phocidae (P. vitulina not cf.) | tooth, canine | I | 1 |
| N3E3 SEQ L5 | B1 | F. Phocidae | phalanx prox | I+ | 1 |
| N3E3 SEQ L5 | B1 | F. Phocidae | phalanx prox | I+ | 1 |
| N3E3 SEQ L5 14/8/82 | B190 | F. Phocidae (prefer P. vitulina) | mandible | I | 1 |
| N3E3 SWQ L5 | B2 | F. Phocidae | phalanx prox | J | 1 |
| N3E4 SWQ L5 17/8/82 RTP | B178 | F. Phocidae | phalanx prox | I | 1 |
| N3E4 SWQ L5 17/8/82 RTP | B179 | F. Phocidae | phalanx middle | I+ | 1 |
| N3E4 SWQ L5 17/8/82 RTP | B180 | L. canadensis | vert c | I+ | 1 |
| N3E4 SWQ L5 17/8/82 RTP | B181 | L. canadensis | skull, occipital | I+ | 1 |
| N3E4 SWQ L5 17/8/82 RTP | B182 | L. canadensis | skull, maxilla | I+ | 1 |
| N3E4 SWQ L5 17/8/82 RTP | B183 | L. canadensis | skull, temporal | I+ | 1 |
| N3E4 SWQ L5 17/8/82 RTP | B184 | L. canadensis | skull, temporal | I+ | 1 |
| N3E7 NWQ L5(?) Ia or II? 8.5cm | B191 | P. vitulina | skull, temporal | I+ | 1 |
| N3E7 NWQ L5(?) Ia or II? 8.5cm | B192 | F. Cervidae cf. R. tarandus | tooth | A? | 1 |
| N4E2 NWQ L5a 22/8/82 (in baulk) | B193 | F. Phocidae | metacarpal 3 | J | 1 |
| N4E2 NWQ L5a 22/8/82 in baulk | B194 | F. Phocidae | rib | I+ | 1 |
| N4E2 NWQ L5a 22/8/82 in baulk | B195 | F. Phocidae | rib | I+ | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S1E5 S0.66E5.58 L3 1.36dbd | B197 | C. canadensis | mandible | I+ | 1 |
| S1E5 S0.66E5.58 L3 1.36dbd | B198 | C. canadensis | tooth, molar 1 | I? | 1 |
| S1E5 S0.66E5.58 L3 1.36dbd | B199 | C. canadensis | tooth, molar 2 | I? | 1 |
| S1E5 S0.66E5.58 L3 1.36dbd | B200 | C. canadensis | tooth, molar 3 | I? | 1 |
| S1E5 s0.66E5.58 L3 1.36dbd | B201 | C. canadensis | mandible | I+ | 1 |
| S1E5 S0.66E5.58 L3 1.36dbd | B202 | C. canadensis | mandible | I+ | 1 |
| S1E5 S0.66E5.58 L3 1.36dbd | B203 | C. canadensis | mandible | I+ | 1 |
| S1E6 L5 17cm northwest wall"" | B169 | P. vitulina | skull, temporal | I+ | 1 |
| S1E6 L5 17cm northwest wall"" | B171 | P. vitulina | skull, temporal | I+ | 1 |
| S1E6 L5 17cm northwest wall"" | B171 | P. vitulina | skull, temporal | I+ | 1 |
| S1E6 L5 17cm northwest wall"" | B172 | P. vitulina | skull, temporal | I+ | 1 |
| S1E6 L5 17cm northwest wall"" | B173 | P. vitulina | skull, temporal | I+ | 1 |
| S1E6 L5 17cm northwest wall"" | B173a | P. vitulina | skull, incus | I+ | 1 |
| S1E6 L5 17cm northwest wall"" | B173b | P. vitulina | skull, stapes | I+ | 1 |
| S1E6 L5 17cm northwest wall"" | B174 | P. vitulina | skull, temporal | I+ | 1 |
| S1E6 L5 17cm northwest wall"" | B175 | P. vitulina | skull, temporal | I+ | 1 |
| S1E6 NWQ L5 or L3(la) 14.5cm | B160 | P. vitulina | skull, temporal | I+ | 1 |
| S1E6 NWQ L5 or L3(la) 14.5cm | B158 | P. vitulina | skull, temporal | I+ | 1 |
| S1E6 NWQ L5 or L3(la) 14.5cm | B159 | P. vitulina | skull, temporal | I+ | 1 |
| S1E6 S0.65E6.43 L5 30cm | B204 | F. Phocidae | femur | J | 1 |
| S1E6 S0.65E6.43 L5 30cm | B205 | F. Phocidae | humerus | J | 1 |
| S1E6 S0.90E6.60 L5 22cm | B196 | V. vulpes | tooth, incisor maxillary | I+? | 1 |
| S3W2 NWQ L5(?) | B98 | P. vitulina | vert atlas | I+ | 1 |
| S6E0 S5.00E0.48 25/6/87 | 373+ | M. octodecemspinosus or scorpius | vert ant thoracic | I+ | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
| --- | --- | --- | --- | --- | --- |
| S6E0 S5.00E0.48 25/6/87 | B373+ | Myoxocephalus sp. cf. octodec or | vert cd | I+ | 5 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | Myoxocephalus sp., cf. | vert | I+ | 10 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | O. mordax | vert | I+ | 221 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | O. mordax | vert | I+ | 15 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | O. mordax | vert | I+ | 33 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | O. mordax | vert | I+ | 4 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | O. mordax | vert | I+ | 1 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | O. mordax | skull, palatine | I+ | 1 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | vert cd | I+ | 31 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | vert cd | | 1 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | Gadus sp. | vert thoracic or post abdominal | I+ | 1 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | F. Cottidae | vert | I+ | 7 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | vert cd | I+ | 1 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | Myoxocephalus sp. cf | vert cd (penultimate) | I+ | 1 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | vert cd (penultimate) | | 3 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | F. Phocidae | vert l | J | 1 |
| S6E0 S5.00E0.48 25/6/87 | B373+ | F. Phocidae | vert l | J | 1 |
| S6E0 S5.01E0.62 L3 26cm sifted | B79 | F. Phocidae | humerus | J | 1 |
| S6E0 S5.01E0.62 L3 26cm sifted | B80 | U. americanus (too small & well | rib | I+ | 1 |
| S6E0 S5.01E0.62 L3 26cm sifted | B81 | F. Phocidae | t. astragalus | J | 1 |
| S6E0 S5.01E0.62 L3 26cm sifted | B82 | P. groenlandica | skull, temporal | I+ | 1 |
| S6E0 S5.01E0.62 L3 26cm sifted | B83 | P. groenlandica | skull, temporal | I+ | 1 |
| S6E0? S5.08E.078 L3 14cm from | B86? | F. Phocidae | vert l | J | 1 |
| S6E0? S5.08E0.78 L3 14cm from | B87? | F. Phocidae | metapodial | J | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S6E0 S5.08E0.78 L3 14cm from | B87 | P. vitulina | skull, maxilla w/some teeth | I | 1 |
| S6E0 S5.08E0.78 L3 14cm from | B88 | P. groenlandica | skull, maxilla w/teeth | I+ | 1 |
| S6E0 S5.08E0.78 L3 14cm from | B86 | F. Phocidae | tooth, canine | A? | 1 |
| S6E0 S5.08E0.78 L3 14cm from | B86 | F. Phocidae | tooth, incisor 3 | A? | 2 |
| S6E0 S5.08E0.78 L3 14cm from | B86 | F. Phocidae | tooth | A? | 5 |
| S6E0 S5.08E0.78 L3 14cm from | B86 | F. Phocidae | maxilla/mandible ID based on | A? | 5 |
| S6E0 S5.08E0.78 L3 14cm from | B86 | F. Phocidae | tooth, incisor | A? | 3 |
| S6E0 S5.0E0.48 25/5/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | skull, operculum | I+ | 2 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | fin rays | I+ | 6 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | fin ray, pelvic | I+ | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | skull, hyomandibular | I+ | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | skull, parasphenoid | I+ | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Cottidae | tooth" row" | I+ | 2 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | skull, epihyal | I+ | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | fin spine, pectoral | I+ | 9 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | Myoxocephalus sp. cf. scorpius | skull, nasal | I+ | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | Myoxocephalus sp. | skull, postcleithrum | I+ | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | Myoxocephalus sp. | skull, postcleithrum | I+ | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Cottidae cf. Myoxocephalus sp. | skull, cf. meurocranial element | I+ | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | Myoxocephalus sp. cf. scorpius | skull, dentary | I+ | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | O. mordax | vert cd | I+ | 2 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | Myoxocephalus sp. cf. scorpius | skull, basioccipital | I+ | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Phocidae | metapodial | I+ | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Phocidae | vert l | J | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Phocidae | vert t | J | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Phocidae | vert t | J | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Phocidae | tooth, incisor maxillary | I | 1 |
| S6E0 S5.0E0.48 25/6/87 | B373+ | F. Phocidae | vert l | J | 1 |
| S6E0 S5.13E0.58 L3 27cm sifted | B52 | F. Phocidae | phalanx prox, pelvic limb | J | 1 |
| S6E0 S5.13E0.58 L3 27cm sifted | B53 | F. Phocidae | t. 3 | J | 1 |
| S6E0 S5.13E0.58 L3 27cm sifted | B54 | F. Phocidae | skull, zygomatic | J | 1 |
| S6E0 S5.13E0.58 L3 27cm sifted | B56 | F. Phocidae | vert t | J | 1 |
| S6E0 S5.13E0.58 L3 27cm sifted | B57 | F. Phocidae | vert t | J | 1 |
| S6E0 S5.13E0.58 L3 27cm sifted | B58 | F. Phocidae | phalanx prox | J | 1 |
| S6E0 S5.13E0.58 L3 27cm sifted | B59 | F. Phocidae | vert t or c | J | 1 |
| S6E0 S5.13E0.58 L3 27cm sifted | B60 | F. Phocidae | vert t or c | J | 1 |
| S6E0 S5.13E0.58 L3 28cm sifted | B55 | F. Phocidae | vert t | J | 1 |
| S6E0 S5.15E0.59 L3 24cm sifted | B18 | F. Phocidae | t. astragalus | J | 1 |
| S6E0 S5.15E0.59 L3 24cm sifted | B19 | F. Phocidae | vert c | J | 1 |
| S6E0 S5.15E0.59 L3 24cm sifted | B20 | F. Phocidae, cf. (otter next closest | metapodial | J | 1 |
| S6E0 S5.19E0.75 L3 25cm sifted | B43 | F. Phocidae | pubis | J | 1 |
| S6E0 S5.19E0.75 L3 25cm sifted | B44 | F. Phocidae | phalanx prox | J | 1 |
| S6E0 S5.19E0.75 L3 25cm sifted | B45 | F. Phocidae | phalanx prox | J | 1 |
| S6E0 S5.19E0.77 L3 25cm sifted | B51 | F. Phocidae | ulna | I | 1 |
| S6E0 S5.20E0.75 L3 28cm sifted | B90 | F. Phocidae | humerus | J | 1 |
| S6E0 S5.20E0.75 L3 28cm sifted | B91 | F. Phocidae | phalanx prox | J | 1 |
| S6E0 S5.20E0.75 L3 28cm sifted | B92 | F. Phocidae | t. 4 | J | 1 |
| S6E0 S5.20E0.75 L3 28cm sifted | B93 | F. Phocidae | vert t | J | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S6E0 S5.20E0.75 L3 28cm sifted | B94 | F. Phocidae | humerus | J | 1 |
| S6E0 S5.21E0.70 L3 27cm sifted | B68 | F. Phocidae | metacarpal 2 | J | 1 |
| S6E0 S5.21E0.70 L3 27cm sifted | B69 | F. Phocidae | vert c | J | 1 |
| S6E0 S5.21E0.70 L3 27cm sifted | B70 | F. Phocidae | sesamoid, pelvic limb | J | 1 |
| S6E0 S5.22E0.82 L3 25cm sifted | B376 | Myoxocephalus sp. cf. scorpius | skull, hyomandibular | I+ | 1 |
| S6E0 S5.22E0.82 L3 25cm sifted | B46 | F. Phocidae | vert t | J | 1 |
| S6E0 S5.22E0.82 L3 25cm sifted | B47 | F. Phocidae | rib 1 | J | 1 |
| S6E0 S5.22E0.82 L3 25cm sifted | B48 | P. vitulina | tooth, post canine maxillary | I | 1 |
| S6E0 S5.25E0.80 L3 26cm | B26 | F. Phocidae | ulna | I | 1 |
| S6E0 S5.25E0.83 L3 28cm | B72 | Myoxocephalus sp., cf. M. scorpius, | vert 1st | I+ | 1 |
| S6E0 S5.25E0.83 L3 28cm sifted | B71 | F. Phocidae | vert c | I+ | 1 |
| S6E0 S5.25E0.83 L3 28cm sifted | B74 | F. Phocidae | phalanx prox | J | 1 |
| S6E0 S5.25E0.83 L3 28cm sifted | B75 | F. Phocidae | vert c | J | 1 |
| S6E0 S5.25E0.83 L3 28cm sifted | B76 | F. Phocidae | vert c | J | 1 |
| S6E0 S5.25E0.83 L3 28cm sifted | B73 | Myoxocephalus sp. cf. scorpius | skull, palatine | I+ | 1 |
| S6E0 S5.28E0.70 L3 30cm sifted | B22 | F. Phocidae | metatarsal 3 | J | 1 |
| S6E0 S5.28E0.70 L3 30cm sifted | B23 | F. Phocidae | vert t | J | 1 |
| S6E0 S5.28E0.70 L3 30cm sifted | B25 | F. Phocidae | vert t or l (post or ant) | J | 1 |
| S6E0 S5.31E0.77 L3 28cm | B30 | C. grylle (definitely a guillemot, only | humerus | I+ | 1 |
| S6E0 S5.31E0.77 L3 28cm | B31 | F. Phocidae | vert t | J | 1 |
| S6E0 S5.31E0.77 L3 28cm | B32 | F. Phocidae | vert t | J | 1 |
| S6E0 S5.31E0.77 L3 28cm | B33 | F. Phocidae | vert t | J | 1 |
| S6E0 S5.31E0.77 L3 28cm | B34 | F. Phocidae | vert t | J | 1 |
| S6E0 S5.31E0.77 L3 28cm | B35 | F. Phocidae | vert l or t (prox l or dist t) | J | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S6E0 S5.31E0.77 L3 28cm | B36 | F. Phocidae | vert t or l (post t or ant l) | J | 1 |
| S6E0 S5.31E0.77 L3 28cm | B37 | F. Phocidae | vert t | J | 1 |
| S6E0 S5.31E0.77 L3 28cm | B38 | F. Phocidae | vert t, c or l | J | 1 |
| S6E0 S5.31E0.77 L3 28cm | B39 | F. Phocidae | vert t, c or l | J | 1 |
| S6E0 S5.31E0.77 L3 28cm | B40 | F. Phocidae | vert t, c or l | J | 1 |
| S6E0 S5.31E0.77 L3 28cm | B41 | F. Phocidae | vert t, c or l | J | 1 |
| S6E0 S5.31E0.77 L3 28cm | B42 | Myoxocephalus sp. cf. scorpius | skull, maxilla | I+ | 1 |
| S6E0 S5.34E0.63 L3 25cm | B13 | U. americanus | skull, maxilla | I+ | 1 |
| S6E0 S5.34E0.63 L3 25cm | B14 | U. americanus | skull, maxilla | A | 1 |
| S6E0 S5.34E0.63 L3 25cm | B4 | F. Phocidae | vert t | J | 1 |
| S6E0 S5.34E0.63 L3 25cm | B8 | U. americanus | skull, maxilla | I+ | 1 |
| S6E0 S5.40E0.80 L3 30cm found | B28 | P. groenlandica | skull, temporal | I+ | 1 |
| S6E0 S5.40E0.80 L3 30cm sifted | B27 | F. Phocidae | vert l | J | 1 |
| S6E0 S5.40E0.80 L3 30cm sifted | B29 | F. Phocidae | phalanx prox | J | 1 |
| S6E0 S5.44E0.74 L3 24cm sifted | B62 | F. Phocidae | vert l | J | 1 |
| S6E0 S5.52E0.93 L3 15cm | B16 | P. vitulina | metatarsal 1 | I+ | 1 |
| S6E0 S5.52E0.93 L3 15cm | B17 | P. vitulina | metatarsal 1 | I+ | 1 |
| S6E0 S5.56E0.93 L3 26cm | B89 | P. groenlandica | skull, temporal | I+ | 1 |
| S6E0 S5E0.48 25/6/87 sifted area | B373+ | F. Cottidae cf. Myoxocephalus sp. | vert | I+ | 2 |
| S6E0 S5E0.48 25/6/87 sifted area | B373+ | Myoxocephalus scorpius | skull, dentary | I+ | 1 |
| S6E0 S5E0.48 25/6/87 sifted area | B373+ | Myoxocephalus scorpius, cf. | skull, premaxilla | I+ | 2 |
| S6E0 S5E0.48 25/6/87 sifted area | B373+ | Myoxocephalus sp. cf. scorpius | skull, maxilla | I+ | 1 |
| S6E0 S5E0.48 25/6/87 sifted area | B373+ | Myoxocephalus sp. cf. scorpius | skull, maxilla | I+ | 1 |
| S6E0 S5E0.48 25/6/87 sifted area | B373+ | F. Cottidae cf. Myoxocephalus sp. | skull, vomer | I+ | 3 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S6E0 S5E0.48 25/6/87 sifted area | B373+ | F. Cottidae cf. Myoxocephalus sp. | skull, vomer | I+ | 1 |
| S6E0 S5E0.48 25/6/87 sifted area | B373+ | Myoxocephalus sp. cf. scorpius | skull, quadrate | I+ | 1 |
| S6E0 S5E0.48 25/6/87 sifted area | B373+ | Myoxocephalus sp. cf. scorpius | skull, quadrate | I+ | 1 |
| S6E1 S5.06E1.01 L6 39cm | B229 | Phalacrocorax auritas (by size not | vert c (10?) | I+ | 1 |
| S6E1 S5.55E1.05 L3 21cm | B100 | F. Phocidae | vert t | I? | 1 |
| S6E1 S5.60E1.02 L3 25-26cm | B155 | F. Cottidae cf. Myoxocephalus sp. | vert atlas | I+ | 1 |
| S6E1 S5.60E1.02 L3 25-27cm | B148 | F. Cottidae cf. Myoxocephalus sp. | vert ant abdominal | I+ | 1 |
| S6E1 S5.60E1.02 L3 25-27cm | B153 | F. Cottidae cf. Myoxocephalus sp. | vert ant abodminal | I+ | 1 |
| S6E1 S5.60E1.02 L3 25-27cm | B154 | F. Cottidae cf. Myoxocephalus sp. | vert ant abdominal | I+ | 1 |
| S6E1 S5.64E1.01 L3 28cm | B117 | P. vitulina | skull, temporal | I+ | 1 |
| S6E1 S5.64E1.01 L3 28cm | B117b | P. vitulina | skull, incus | I+ | 1 |
| S6E1 S5.64E1.01 L3 28cm L3 | B117a | P. vitulina | skull, malleus | I+ | 1 |
| S6E1 S5.64E1.05 L3 23cm | B116 | F. Phocidae | vert t | I? | 1 |
| S6E1 S5.72E1.04 L5 or 3A 28cm | B103 | F. Phocidae | skull, basisphenoid | J | 1 |
| S6E1 S5.72E1.04 L5 or 3A 28cm | B105 | F. Phocidae | vert t | J | 1 |
| S6E1 S5.72E1.04 L5 or 3A 28cm | B108 | F. Phocidae | tooth, canine | I+? | 1 |
| S6E1 S5.72E1.04 L5 or 3A 28cm | B109 | F. Phocidae | tooth, incisor 1 or 2 maxillary | I | 1 |
| S6E1 S5.72E1.04 L5 or 3A 28cm | B110 | F. Phocidae | tooth, incisor 1 or 2 maxillary | I | 1 |
| S6E1 S5.72E1.04 L5 or 3A 28cm | B111 | F. Phocidae | tooth, premolar 3 maxillary | I | 1 |
| S6E1 S5.72E1.04 L5 or 3A 28cm | B112 | P. vitulina | tooth, premolar 3 or 4 | I | 1 |
| S6E1 S5.72E1.04 L5 or 3A 28cm | B113 | P. vitulina | tooth, premolar 1 | I | 1 |
| S6E1 S5.72E1.04 L5 or 3A 28cm | B114 | F. Phocidae | tooth, post canine | I+ | 1 |
| S6E1 S5.72E1.04 L5 or 3A 28cm | B115 | F. Phocidae | tooth, post canine | I+ | 1 |
| S6E1 S5.72E1.04 L5 or 3A 28cm | B115a | F. Phocidae | phalanx middle | J | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S6E1 S5.78E1.01 L3 24cm | B118 | Myoxocephalus sp. | vert thoracic or ant abdominal | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B119 | Myoxocephalus sp. | vert thoracic or ant abdominal | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B120 | Myoxocephalus sp. | vert cd | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B121 | O. mordax | vert precaudal | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B122 | O. mordax | vert cd | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B123 | O. mordax | vert thoracic (post abdominal) | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B124 | O. mordax | vert thoracic (post abdominal) | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B125 | Myoxocephalus sp. cf. scorpius | skull, maxilla | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B126 | Myoxocephalus sp. | skull, quadrate | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B127 | Myoxocephalus sp. cf. scorpius | skull, angular | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B128 | F. Cottidae cf. Myoxocephalus sp. | skull, parasphenoid | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B129 | O. mordax | skull, lingual or sublingual | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B130 | F. Cottidae cf. Myoxocephalus sp. | skull, unidentified element | I+ | 1 |
| S6E1 S5.78E1.01 L3 24cm | B131 | F. Phocidae | tooth, incisor mandibular | I? | 1 |
| S6E1 S5.79E1.22 L5 25cm | B211 | F. Phocidae | skull, basisphenoid | I | 1 |
| S6E1 S5.79E1.22 L5 25cm | B213 | F. Phocidae | skull, basisphenoid | I | 1 |
| S6E1 S5.79E1.22 L5 25cm | B214 | F. Phocidae | skull, occipital | I | 1 |
| S6E1 S5.79E1.22 L5 25cm | B216 | F. Phocidae | skull, occipital | I+ | 1 |
| S6E1 S5.79E1.22 L5 25cm | B218 | F. Phocidae | skull, occipital | I | 1 |
| S6E1 S5.79E1.22 L5 25cm | B220 | F. Phocidae | skull, occipital | I | 1 |
| S6E1 S5.79E1.22 L5 25cm | B221 | F. Phocidae | skull, occipital | I | 1 |
| S6E1 S5.79E1.22 L5 25cm | B222 | F. Phocidae | vert t | J | 1 |
| S6E1 S5.80E1.15 L5 24cm | B225 | P. groenlandica | skull, temporal | I+ | 1 |
| S6E1 S5.80E1.15 L5 24cm | B226 | P. groenlandica | skull, temporal | I+ | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S6E1 S5.80E1.15 L5 24cm | B226a | P. groenlandica | skull, malleus | I+ | 1 |
| S6E1 S5.80E1.15 L5 24cm | B226b | P. groenlandica | skull, malleus | I+ | 1 |
| S6E1 S5.80E1.15 L5 24cm | B226c | P. groenlandica | skull, incus | I+ | 1 |
| S6E1 S5.80E1.15 L5 24cm | B226d | P. groenlandica | skull, stapes | I+ | 1 |
| S6E1 S5.80E1.15 L5 24cm | B227 | P. groenlandica | metatarsal 2 | I+ | 1 |
| S6E1 SWQ L5 or (3A) 18/6/87 | B372+ | Myoxocephalus sp. | vert, post. abdominal | I+ | 2 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | O. mordax | vert | I+ | 4 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | O. mordax | vert | I+ | 1 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | Myoxocephalus sp. cf. M. scorpius | vert | I+ | 4 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | Myoxocephalus sp. | vert, ant. abdominal | I+ | 2 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | Myoxocephalus sp. | vert cd | I+ | 12 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | F. Cottidae | vert | I+ | 1 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | Myoxocephalus sp. | skull, post temporal | I+ | 1 |
| S6E1 SWQ L5 or 3A 28/6/87 | B372+ | Myoxocephalus sp. cf. scorpius | skull, operculum | I+ | 1 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | F. Gadidae cf. Gadus sp. | skull, post temporal | I+ | 1 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | F. Cottidae cf. Myoxocephalus sp. | vert | I+ | 1 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | F. Cottidae cf. Myoxocephalus sp. | branchiostegal ray | I+ | 2 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | F. Cottidae | fin rays | I+ | 6 |
| S6E1 SWQ L5 or (3A) 28/6/87 | B372+ | Myoxocephalus sp. cf. scorpius | skull, post temporal | I+ | 1 |
| S7E0 L5 35cm 27/6/87 | B274+ | F. Cottidae | branchiostegal ray | I+ | 1 |
| S7E0 S-56 E-87 31 cm | B381 | F. Cottidae cf. Myoxocephalus sp. | vert 1st | I+ | 1 |
| S7E0 S-69E95 L5 22cm 28/6/87 | B286 | F. Cottidae cf. Myoxocephalus sp. | vert post abdominal | I+ | 1 |
| S7E0 S0.57E0.96 L5 16cm | B279 | F. Cottidae cf. Myoxocephalus sp. | skull, suboperculum | I+ | 1 |
| S7E0 S0.57E0.96 L5 16cm | B280 | F. Gadidae cf. G. morhua | skull, sphenotic | I+ | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S7E0 S43E44 L5 34cm 25/6/87 | B278 | P. vitulina (distinct morphologically | t. astragalus | I+ | 1 |
| S7E0 S50E91 L5 22cm 25/6/87 | B398 | F. Cottidae cf. M. scorpius | skull, operuclum | I+ | 1 |
| S7E0 S53-57E3-9 L5 23cm | B267 | F. Phocidae | vert t (post) or l (ant) | I+ | 1 |
| S7E0 S53-57E3-9 L5 23cm | B268 | F. Gadidae cf. Gadus sp. | vert post abdominal | I+ | 1 |
| S7E0 S53-57E3-9 L5 23cm | B269 | Myoxocephalus sp. cf. scorpius | skull, dentary | I+ | 1 |
| S7E0 S53-57E3-9 L5 23cm | B270 | P. vitulina | skull, temporal | I+ | 1 |
| S7E0 S64E73 L5 36cm 27/6/87 | B343 | M. scorpius | skull, subcleithrum | I+ | 1 |
| S7E0 S65-67E87-92 L5 32cm | B261 | O. mordax | vert | I+ | 1 |
| S7E0 S65-67E87-92 L5 32cm | B262 | O. mordax | vert | I+ | 1 |
| S7E0 S65-67E87-92 L5 32cm | B263 | O. mordax | vert | I+ | 1 |
| S7E0 S67E94 L5 19cm 23/6/87 | B282 | P. vitulina | skull, temporal | I+ | 1 |
| S7E0 S70E80 L5 30cm 26/6/87 | B283 | G. morhua | skull, premaxilla | I+ | 1 |
| S7E0 S71E84 L5 30cm 26/6/87 | B344 | F. Cottidae cf. Myoxocephalus sp. | vert ant abdominal | I+ | 1 |
| S7E0 S72-74E94-96 L5 22cm | B399 | P. vitulina | skull, temporal | I+ | 1 |
| S7E0 S72E93 L5 32cm 26/6/87 | B259 | Myoxocephalus sp.,cf. M. scorpius, | vert cd | I+ | 1 |
| S7E0 S72E96 L5 31cm 25/6/87 | B287 | P. vitulina | skull, temporal | I+ | 1 |
| S7E0 S77E86 L5 33cm 26/6/87 | B276 | C. grylle | femur | I+ | 1 |
| S7E0 + S7E1 S61-66E? L5 | B397 | F. Phocidae | skull, temporal | I+ | 1 |
| S7E0,S7E1 S71E97-94 L5 32cm | B266 | F. Phocidae (matches adult harp) | rib, sternal cartilage | A | 1 |
| S7E0,S7E1 S71E97094 L5 32cm | B265 | F. Phocidae | vert s | J | 1 |
| S7E0 S90E93 L5 32cm 26/6/87 | B275 | P. vitulina (definitely not harp, ring, | t. calcaneum | I+ | 1 |
| S7E1 L5 15cm L5 21/6/87 note | B292 | P. vitulina | skull, temporal | I+ | 1 |
| S7E1 L5 16cm 27/6/87 dustpan | B375 | C. grylle | not recorded | I+ | 1 |
| S7E1 L5 20cm 23/6/87 note | B355 | O. mordax | vert | I+ | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S7E1 L5(?) 26/6/87 | B309 | P. vitulina | tooth, molar mandibular | I | 1 |
| S7E1 L5 35cm 27/6/87 note | B273 | F. Cottidae cf. Myoxocephalus sp. | vert cd | | 1 |
| S7E1 S0.54E20-24 L5 23cm | B335 | R. tarandus | metatarsal | I+ | 1 |
| S7E1 S0.54E5-12 L5 19cm | B352 | F. Phocidae | skull, occipital | J | 1 |
| S7E1 S0.54E5-12 L5 19cm | B353 | F. Phocidae | rib 1 | I | 1 |
| S7E1 S0.70E9-12 L5 17cm | B288 | F. Phocidae cf. P. groenlandica | vert l | I+ | 1 |
| S7E1 S0.81E0.15 L5 22cm | B257 | F. Gadidae cf. Gadus sp. | vert | I+ | 1 |
| S7E1 S0.92E0.15 L5 16cm | B290 | P. vitulina | skull, temporal | I+ | 1 |
| S7E1 S0.93E0.11 L5 13cm | B314 | Phoca sp. | skull, temporal | I+ | 1 |
| S7E1 S0.93E0.11 L5 13cm | B313 | P. vitulina | skull,temporal | I+ | 1 |
| S7E1 S0.99E0.17 L5 28cm | B308 | F. Phocidae | vert c | J | 1 |
| S7E1 S12E46-48 L3 22-26cm | B230 | R. tarandus | vert atlas | I+ | 1 |
| S7E1 S14E38 L5 22cm 28/6/87 | B371 | P. groenlandica | skull, temporal | I+ | 1 |
| S7E1 S14E54 L3 19-22cm feature | B233 | goose, large | femur | I+ | 1 |
| S7E1 S16E25 L5 25cm 28/6/87 | B395 | goose, large | vert c 9 | I+ | 1 |
| S7E1 S18E14-18 L5 18cm 28/6/87 | B367 | F. Phocidae | humerus | J | 1 |
| S7E1 S20-22E35 L5 19cm 27/6/87 | B340 | goose, large cf. B. canadensis | radius | I+ | 1 |
| S7E1 S20-40E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | vert post abdominal or cd | I+ | 9 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | O. mordax | ceratohyal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | O. mordax | urohyal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | O. mordax | vert post abdominal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf.(?) M. | vert post abodimnal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | vert post abdominal | I+ | 2 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | vert post abdominal or cd | I+ | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | vert cd | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | O. mordax | skull, lingual | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | skull, maxilla | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | skull, dentary | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | skull, dentary | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Gadus sp. cf. morhua | skull, post temporal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | skull, post temporal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. | skull, subcleithrum | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Gadus sp. | vert | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. | skull, parietal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | skull, hyomandibular | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | M. scorpius | skull, frontal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | skull, subcleithrum | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | F. Cottidae cf. Myoxocephalus sp. | skull, urohyal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | F. Cottidae | branchiostegal ray | I+ | 7 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | F. Cottidae | fin rays | I+ | 4 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | F. Cottidae cf. Myoxocephalus sp. | Pharyngeal Branchial | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | F. Cottidae | fin ray, pelvic | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | P. vitulina | t. 2 | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | P. vitulina (definitely not | t. 3 | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | F. Phocidae | skull, basisphenoid | I | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | F. Phocidae | rib | J | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | P. vitulina | vert t | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | F. Gadidae cf. Gadus sp. | vert post abodiminal | I+ | 3 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | vert post abdominal | I+ | 4 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | vert ant abdominal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | Myoxocephalus sp. cf. scorpius | skull, post temporal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-28cm | B375+ | F. Phocidae | metatarsal 2 | J | 1 |
| S7E1 S20-45E12-45 L5 24-48cm | B375+ | F. Cottidae cf. Myoxocephalus sp. | vert ant abdominal | I+ | 1 |
| S7E1 S20-45E12-45 L5 24-48cm | B375+ | Myoxocephalus sp. cf. scorpius | skull, basioccipital | I+ | 1 |
| S7E1 S20E23 L5 18cm 27/6/87 | B379 | white winged scoter/common eider | tibiotarsus | I+ | 1 |
| S7E1 S27E14 L5 21cm 27/6/87 | B377 | cetacean | skull frag | - | 1 |
| S7E1 S28E47 L5 19cm 27/6/87 | B391 | M. americana | tibia | A? | 1 |
| S7E1 S31E29 L5(?) 15cm 21/6/87 | B400 | F. Phocidae | mandible | J | 1 |
| S7E1 S31E29 L5(?) 15cm 21/6/87 | B401 | F. Phocidae | mandible | J | 1 |
| S7E1 S31E29 L5(?) 15cm 21/6/87 | B402 | F. Phocidae | tooth, canine | I | 1 |
| S7E1 S31E29 L5(?) 15cm 21/6/87 | B403 | F. Phocidae | tooth, canine | I | 1 |
| S7E1 S31E29 L5(?) 15cm 21/6/87 | B404 | F. Phocidae | tooth, canine | I | 1 |
| S7E1 S31E29 L5(?) 15cm 21/6/87 | B405 | F. Phocidae | tooth, canine | I | 1 |
| S7E1 S31E29 L5 15cm 21/6/87 | B406 | M. serrator (def. morph. distinct | scapula | I+ | 1 |
| S7E1 S37E36 L5 24cm 27/6/87 | B361 | F. Cottidae cf. Myoxocephalus sp. | skull, vomer | I+ | 1 |
| S7E1 S4-7E29 L5 22cm 28/6/87 | B358 | F. Phocidae | humerus | J | 1 |
| S7E1 S45E17 L6 54cm 28/6/87 | B334 | F. Cottidae cf. Myoxocephalus sp. | vert ant abdominal | I+ | 1 |
| S7E1 S45E38-45 L5 16cm 27/6/87 | B384 | sea duck cf. eider or scoter | tibiotarsus | I+ | 1 |
| S7E1 S47E23 L5 20cm 27/6/87 | B383 | F. Phocidae | rib | J | 1 |
| S7E1 S47E23 L5 22cm 27/6/87 | B378 | P. vitulina ? | t. 4 | I+ | 1 |
| S7E1 S48E28 L5 21cm 27/6/87 | B376 | P. vitulina (definitely not harp, grey, | metatarsal 4 | I+ | 1 |
| S7E1 S49E30 L5 19cm 27/6/87 | B389 | F. Phocidae | vert c (post) | J | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S7E1 S49E39 L5 27cm 27/6/87 | B390 | F. Phocidae (prefer P. vitulina) | radius | J | 1 |
| S7E1 S50-70E22-33 L5 20-30cm | B362 | F. Phocidae | tibia | J | 1 |
| S7E1 S50-70E22-33 L5 20-30cm | B363 | F. Phocidae | vert t or l (post or ant) | J | 1 |
| S7E1 S50-70E22-33 L5 20-30cm | B365 | F. Phocidae | rib, middle | J | 1 |
| S7E1 S51E53-59 L5 17cm 27/6/87 | B386 | F. Phocidae | rib (mid. to post.) | I | 1 |
| S7E1 S52E43 L5 17cm 24/6/87 | B380 | P. vitulina | tooth | I+ | 1 |
| S7E1 S56E4 L5 26cm 25/6/87 | B295 | Myoxocephalus sp. | skull, subcleithrum | I+ | 1 |
| S7E1 S58E25 L5 20cm 27/6/87 | B385 | F. Phocidae | vert c | J | 1 |
| S7E1 S58E9 L5 26cm 25/6/87 | B306 | Myoxocephalus sp. cf. scorpius | skull, maxilla | I+ | 1 |
| S7E1 S58E9 L5 26cm 25/6/87 | B307 | Myoxocephalus sp. cf. scorpius | skull, maxilla | I+ | 1 |
| S7E1 S6-8E20-22 L5 27cm | B387 | F. Phocidae | vert axis | J | 1 |
| S7E1 S6-8E20-22 L5 27cm | B388 | F. Phocidae | metapodial | J | 1 |
| S7E1 S6.66E1.23 21-22cm | B238 | Phoca sp. (Harp/Harbour/Grey) | vert c 2 | I | 1 |
| S7E1 S6.66E1.23 21-22cm | B239 | U. americanus | mandible | A | 1 |
| S7E1 S61-63E0.35 L5 19cm | B360 | F. Alcidae cf. C. grylle | tibiotarsus | I+ | 1 |
| S7E1 S62-64E30-36 L5 22cm | B368 | F. Phocidae | phalanx prox, pelvic limb | I+ | 1 |
| S7E1 S62-64E30-36 L5 22cm | B369 | F. Phocidae | rib | I+ | 1 |
| S7E1 S62-64E30-36 L5 22cm | B370 | F. Phocidae | vert c | J | 1 |
| S7E1 S63E15 L5 24cm 23/6/87 | B301 | Myoxocephalus scorpius, cf. | vert post abdominal | I+ | 1 |
| S7E1 S63E15 L5 24cm 23/6/87 | B302 | Myoxocephalus scorpius, cf. | vert cd | I+ | 1 |
| S7E1 S63E15 L5 24cm 23/6/87 | B303 | Myoxocephalus sp., cf. | vert ant abdominal | I+ | 1 |
| S7E1 S63E31 L6 37cm 28/6/87 | B240 | F. Cottidae cf. Myoxocephalus sp. | vert ant abdominal | I+ | 1 |
| S7E1 S64-68E13-19 L5 17cm | B315 | P. vitulina | mandible | J | 1 |
| S7E1 S64-68E13-19 L5 17cm | B316 | F. Phocidae | tooth, canine | I | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S7E1 S64E7 L5 26cm 25/6/87 | B294 | Myoxocephalus sp. cf. scorpius | skull, dentary | I+ | 1 |
| S7E1 S65E13-18 L5 19cm 23/6/87 | B296 | F. Phocidae | ulna | I | 1 |
| S7E1 S65E13-18 L5 19cm 23/6/87 | B298 | F. Phocidae | ulna | I | 1 |
| S7E1 S65E13-18 L5 19cm 23/6/87 | B299 | Myoxocephalus sp. | skull, quadrate | I+ | 1 |
| S7E1 S68E15 L5 24-25cm 25/6/87 | B366 | Phoca sp. groenlandica/vitulina | t. astragalus | J | 1 |
| S7E1 S68E18 L3 17cm 23/6/87 | B254 | C. grylle | humerus | I+ | 1 |
| S7E1 S68E18 L3 17cm 23/6/87 | B255 | C. grylle | carpometacarpus | I+ | 1 |
| S7E1 S68E24 L6(?) 46cm 28/6/87 | B393 | P. vitulina | skull, temporal | I+ | 1 |
| S7E1 S68E24 L6(?) 46cm 28/6/87 | B394 | P. vitulina | skull, temporal | I+ | 1 |
| S7E1 S69-73E43-47 L3 18cm | B243 | P. vitulina (definitely not harp, ring, | metatarsal 1 | I+ | 1 |
| S7E1 S69E1-3 L3 20cm 22/6/87 | B244 | F. Phocidae, cf. | metapodial | J | 1 |
| S7E1 S69E1-3 L3 20cm 22/6/87 | B245 | F. Phocidae (closer to Harp (3 refs) | c. radial | J | 1 |
| S7E1 S69E1-3 L3 20cm 22/6/87 | B246 | F. Phocidae, cf. | sternebra middle | J | 1 |
| S7E1 S6E26 L5 24cm 28/6/87 | B277 | F. Phocidae | phalanx, dist | I+ | 1 |
| S7E1(?) S70E12-17 L5 22cm | B317 | P. vitulina | mandible | J | 1 |
| S7E1(?) S70E12-17 L5 22cm | B318 | F. Phocidae | skull, basisphenoid | I | 1 |
| S7E1 S70E12-17 L5 22cm 23/6/87 | B320 | F. Cottidae cf. Myoxocephalus sp. | vert ant abdominal | I+ | 1 |
| S7E1(?) S70E12-17 L5 22cm | B321 | Myoxocephalus sp. cf. scorpius | skull, dentary | I+ | 1 |
| S7E1(?) S70E12-17 L5 22cm | B322 | Myoxocephalus sp. cf. scorpius | skull, dentary | I+ | 1 |
| S7E1(?) S70E12-17 L5 22cm | B323 | F. Phocidae cf. | tooth, canine | I | 1 |
| S7E1 S70E9-12 L5 17cm 23/6/87 | B289 | F. Phocidae | humerus | J | 1 |
| S7E1 S71E1-16 L3 20cm 22/6/87 | B247 | duck sp. | synsacrum | I+ | 1 |
| S7E1 S71E1-16 L3 20cm 22/6/87 | B248 | F. Phocidae | radius | J | 1 |
| S7E1 S71E1-16 L3 20cm 22/6/87 | B250 | F. Phocidae | phalanx middle | J | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| S7E1 S72E19 L5 13cm 22/6/87 | B354 | F. Cottidae cf. Myoxocephalus sp. | vert post abdominal | I+ | 1 |
| S7E1 S72E23 L3 17cm 21/6/87 | B252 | P. vitulina | skull, temporal | I+ | 1 |
| S7E1 S73-75E7-8 L5 23cm | B339 | P. vitulina (point at top of crest of | humerus | I | 1 |
| S7E1 S73-76E17-21 L5 25cm | B336 | O. mordax | vert ant abdominal | I+ | 1 |
| S7E1 S75E10 L3 18cm 22/6/87 | B242 | F. Phocidae | vert l | J | 1 |
| S7E1 S75E28 L5 17cm 23/6/87 | B347 | P. vitulina | skull, temporal | I+ | 1 |
| S7E1 S75E28 L5 17cm 23/6/87 | B348 | P. vitulina | skull, temporal | I+ | 1 |
| S7E1 S75E28 L5 17cm 23/6/87 | B349 | P. vitulina | skull, temporal | I+ | 1 |
| S7E1 S77-79E13 L5 25cm 25/6/87 | B305 | F. Phocidae | phalanx prox, pelvic limb | J | 1 |
| S7E1 S77E10 L5 24cm 25/6/87 | B310 | F. Phocidae | vert l | J | 1 |
| S7E1 S77E10 L5 24cm 25/6/87 | B311 | Myoxocephalus sp. cf. scorpius | skull, maxilla | I+ | 1 |
| S7E1 S77E10-14 L5 23cm 25/6/87 | B256 | P. vitulina | tooth, premolar mandibular 2 or | I | 1 |
| S7E1 S77E27 L5 18cm 23/6/87 | B293 | F. Phocidae | vert c or t (POST or ANT) | J | 1 |
| S7E1 S79E52-54 L3 18cm 27/6/87 | B234 | F. Phocidae | phalanx prox | I | 1 |
| S7E1 S79E52-54 L3 18cm 27/6/87 | B235 | F. Phocidae | phalanx prox | I | 1 |
| S7E1 S7E26 L5 27cm 28/6/87 | B382 | M. scorpius | skull, dentary | I+ | 1 |
| S7E1 S83E27 L? 19cm 23/6/87 | B356 | F. Phocidae | vert t | I+ | 1 |
| S7E1 S83E27 L? 19cm 23/6/87 | B357 | F. Phocidae | vert t | I+ | 1 |
| S7E1 S87E46 L3 17cm 21/6/87 | B253 | goose cf. B. canadensis (definitely | c. ulna | I+ | 1 |
| S7E1 S88E8 29cm 25/6/87 | B333 | P. vitulina | skull, temporal | I+ | 1 |
| S7E1 S88E8 29cm 25/6/87 | B333a | P. vitulina | skull, malleus | I+ | 1 |
| S7E1 S88E8 29cm 25/6/87 | B333b | P. vitulina | skull, stapes | I+ | 1 |
| S7E1 S8E49 L3 24cm 20/6/87 | B231 | Myoxocephalus sp. | skull, dentary | I+ | 1 |
| S7E1 S8E49 L3 24cm 20/6/87 | B231 | R. tarandus | vert atlas | I+ | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
| --- | --- | --- | --- | --- | --- |
| S7E1 S8E49 L3 24cm 20/6/87 | B232 | F. Cottidae | vomer | I+ | 1 |
| S7E1 S90E15 L5 23-24cm | B332 | P. vitulina | vert t | I+ | 1 |
| S7E1 S92E11 L5 34cm 26/6/87 | B407 | F. Phocidae | vert t | J | 1 |
| S7E1 S92E11 L5 34cm 26/6/87 | B408 | F. Phocidae | vert t | J | 1 |
| S7E1 S94-96E10-13 L5 31cm | B300 | F. Phocidae | ischium | J | 1 |

# APPENDIX B

## Catalogue of Identified Specimens from the Beaches Site (DeAk-1)

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| N33.58W24.42 | X | F. Phocidae | metapodial | J | 1 |
| N33.58W24.42 | X | F. Phocidae | carpal | J | 1 |
| N33.58W24.42 | X | F. Phocidae | phalanx | I | 8 |
| N33.58W24.42 | X | F. Phocidae | phalanx | I | 1 |
| N33.58W24.42;11dbs;F4;TP24;18/10/89 | 154 | Larus sp. | sternum | I+ | 1 |
| N33.58W24.42;11dbs;F4;TP24;18/10/89 | 155 | sea duck sp. cf. Somateria sp. | humerus | I+ | 1 |
| N33.58W24.42;11dbs;F4;TP24;18/10/89 | 156 | F. Phocidae | femur | J | 1 |
| N33.58W24.42;11dbs;F4;TP24;18/10/89 | 157 | F. Phocidae | tibia | J | 1 |
| N33.58W24.42;11dbs;F4;TP24;18/10/89 | 158 | F. Phocidae | vert c | J | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 159 | M. americana | humerus | A? | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 160 | B. canadensis | humerus | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 161 | Larus sp., small gull | tibiotarsus | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 163 | P. auritas | ? | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 163 | Phoca sp. | skull, occipital | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 164 | Phoca sp. | skull, occipital | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 165 | Somateria sp. | ulna | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 166 | Phoca sp. | skull, occipital | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 167 | Somateria sp. | carpometacarpus | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 168 | B. canadensis | sternum | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 169 | C. corax | scapula | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 170 | Branta sp. | vert t | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 171 | P. auritas | vert c | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 172 | duck sp., large | vert c | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 173 | B. canadensis | femur | I+ | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| N33.58W24.42;F4;TP24;19/10/89 | 174 | goose sp., large | sternum | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 175 | goose sp., large | vert t | I+ | 2 |
| N33.58W24.42;F4;TP24;19/10/89 | 176 | Somateria sp. | humerus | I+ | 2 |
| N33.58W24.42;F4;TP24;19/10/89 | 177 | Somateria sp. | coracoid | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 178 | duck sp. | phalanx, prox, pectoral digit II | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 179 | duck sp. | vert t | I+ | 2 |
| N33.58W24.42;F4;TP24;19/10/89 | 180 | B. canadensis | tibiotarsus | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 181 | P. groenlandica | ulna | I+? | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 182 | F. Phocidae | humerus | J | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 183 | F. Phocidae | t. astragalus | J | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 184 | F. Phocidae | t. astragalus | J | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 185 | F. Phocidae | vert c | J | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 186 | F. Phocidae | rib | J | 6 |
| N33.58W24.42;F4;TP24;19/10/89 | 187 | F. Phocidae | rib | J | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 189 | F. Phocidae | phalanx, middle? | J | 3 |
| N33.58W24.42;F4;TP24;19/10/89 | 190 | F. Phocidae | metacarpal | J | 2 |
| N33.58W24.42;F4;TP24;19/10/89 | 192 | F. Phocidae | tooth, canine | I? | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 193 | F. Phocidae | mandible | J | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 194 | F. Phocidae | vert t | I | 2 |
| N33.58W24.42;F4;TP24;19/10/89 | 195 | F. Phocidae | vert t | I | 2 |
| N33.58W24.42;F4;TP24;19/10/89 | 196 | F. Phocidae | vert t | I | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 197 | F. Phocidae | vert t | I | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 199 | F. Phocidae | vert t | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 200 | M. americana | vert l | A? | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 201 | F. Phocidae | humerus | J | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| N33.58W24.42;F4;TP24;19/10/89 | 202 | F. Phocidae | vert l | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 203 | F. Phocidae | sternebra | J | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 204 | goose sp., large | furculum | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 205 | goose sp., large | vert c | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 206 | duck sp. | carpometacarpus | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 207 | duck sp. | ulna | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 208 | goose sp., large | furculum | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 209 | F. Phocidae | tibia | J | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 210 | R. tarandus | phalanx, proximal | I+ | 1 |
| N33.58W24.42;F4;TP24;19/10/89 | 211 | R. tarandus | humerus | I+ | 1 |
| N33.58W24.42;F4;TP24;1989 | 100 | duck sp., large | tarsometatarsus | I+ | 1 |
| N33.58W24.42;F4;TP24;1989 | 101 | F. Phocidae | humerus | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 102 | F. Phocidae | femur | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 103 | F. Phocidae | femur | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 104 | F. Phocidae | scapula | I+ | 1 |
| N33.58W24.42;F4;TP24;1989 | 105 | F. Phocidae | scapula | I | 1 |
| N33.58W24.42;F4;TP24;1989 | 106 | F. Phocidae | rib | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 107 | F. Phocidae | rib | J | 2 |
| N33.58W24.42;F4;TP24;1989 | 108 | F. Phocidae | rib | J | 6 |
| N33.58W24.42;F4;TP24;1989 | 109 | F. Phocidae | vert l | I | 1 |
| N33.58W24.42;F4;TP24;1989 | 110 | F. Phocidae | vert t | I | 1 |
| N33.58W24.42;F4;TP24;1989 | 111 | F. Phocidae | vert | I | 4 |
| N33.58W24.42;F4;TP24;1989 | 112 | F. Phocidae | vert ca | I+ | 1 |
| N33.58W24.42;F4;TP24;1989 | 113 | F. Phocidae | metacarpal 5 | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 115 | F. Phocidae | phalanx, prox | I+ | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| N33.58W24.42;F4;TP24;1989 | 116 | F. Phocidae | phalanx, prox or mid | J | 3 |
| N33.58W24.42;F4;TP24;1989 | 117 | F. Phocidae | phalanx, prox. or mid | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 118 | F. Phocidae | phalanx, prox or mid | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 119 | F. Phocidae | phalanx, prox | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 120 | F. Phocidae | metatarsal | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 120 | F. Phocidae | metatarsal | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 120 | F. Phocidae | metacarpal 2(?) | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 122 | F. Phocidae | metacarpal? | I+ | 1 |
| N33.58W24.42;F4;TP24;1989 | 123 | F. Phocidae | rib | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 124 | F. Phocidae | tarsal c | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 125 | C. canadensis | metatarsal 3 | A? | 1 |
| N33.58W24.42;F4;TP24;1989 | 126 | F. Phocidae | metatarsal 2 | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 127 | R. tarandus | phalanx, prox 4 | I+ | 1 |
| N33.58W24.42;F4;TP24;1989 | 128 | R. tarandus | metatarsal | I+ | 1 |
| N33.58W24.42;F4;TP24;1989 | 129 | R. tarandus | tibia | I+ | 1 |
| N33.58W24.42;F4;TP24;1989 | 133 | F. Phocidae | vert | J | 3 |
| N33.58W24.42;F4;TP24;1989 | 134 | F. Phocidae | vert c | J | 1 |
| N33.58W24.42;F4;TP24;1989 | 135 | F. Phocidae | vert | J | 2 |
| N33.58W24.42;F4;TP24;1989 | 136 | F. Phocidae | phalanx, dist | I | 1 |
| N33.58W24.42;F4;TP24;1989 | 137 | F. Phocidae | phalanx, dist | I | 1 |
| N33.58W24.42;F4;TP24;1989 | 138 | Phoca sp. cf. vitulina | scapula | I | 1 |
| N33.58W24.42;F4;TP24;1989 | 139 | F. Phocidae | scapula | I | 1 |
| N33.58W24.42;F4;TP24;1989 | 96 | F. Phocidae | skull, ethmoid | I+ | 1 |
| N33.58W24.42;F4;TP24;1989 | 97 | Somateria or Melanitta sp. prefer common elder | coracoid | I+ | 1 |
| N33.58W24.42;F4;TP24;1989 | 98 | goose sp., large | ? | I+ | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| N33.58W24.42;F4;TP24;1989 | 99 | B. canadensis | femur | I+ | 1 |
| N33.58W24.42;TP24;11cm;18/10/89 > | - | M. arenaria | | | 1 |
| N33.58W24.42;TP24;11cm;18/10/89 > | - | M. arenaria | | | 1 |
| N33.58W24.42;TP24;F4;19/10/89 | - | Canis sp. | tooth, incisor 2 mandibular | A? | 1 |
| N33.58W24.42;TP24;F4;19/10/89 | - | F. Phocidae | tooth, canine | A? | 1 |
| N33.58W24.42;TP24;F4;19/10/89 > | - | M. arenaria | | | 1 |
| N33.58W24.42;TP24;F4;19/10/89 > | - | M. arenaria | | | 8 |
| N33.58W24.42;TP24;F4;19/10/89 > | - | M. arenaria | | | 4 |
| N33.58W24.42;TP24;F4;19/10/89 | 1 | R. tarandus | tooth, incisor 3 mandibular | A? | 1 |
| N33.58W24.42;TP24;F4;19/10/89 | 1 | F. Phocidae | ilium | J | 1 |
| N33.58W24.42;TP24;F4;19/10/89 | 1 | M. americana | vert t | I+ | 1 |
| N33.58W24.42;TP24;F4;19/10/89 | 1 | C. canadensis | tooth, incisor | | 1 |
| N34.5W24;15dbs;F4;TP13;1990 | 50 | Phoca sp. | scapula | I | 1 |
| N34.5W24;15dbs;F4;TP13;1990 | 51 | L. canadensis | t. calcaneus | A? | 1 |
| N34.5W24;15dbs;F4;TP13;1990;shell | 52 | L. canadensis | tibia | A? | 1 |
| N34.5W24;15dbs;F4;TP13;1990;shell | 53 | R. tarandus | phalanx, prox 4 | I+? | 1 |
| N34.5W24;15dbs;F4;TP13;1990;shell | 54 | R. tarandus | tibia | I+ | 1 |
| N34.5W24;15dbs;F4;TP13;1990;shell | 56 | R. tarandus | phalanx prox | I+ | 1 |
| N34.5W24;15dbs;F4;TP13;1990;shell | 57 | F. Phocidae | rib | J | 1 |
| N34.5W24;15dbs;F4;TP13;1990;shell | 58 | F. Phocidae | carpal/tarsal | J | 1 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 10 | Phoca sp. | skull, temporal | I+ | 2 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 12 | Phoca sp. | vert t. | I+ | 3 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 13 | F. Phocidae | vert c | I+ | 1 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 17 | Phoca sp. | femur | I | 1 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 18 | F. Phocidae | c 4 | I+ | 1 |

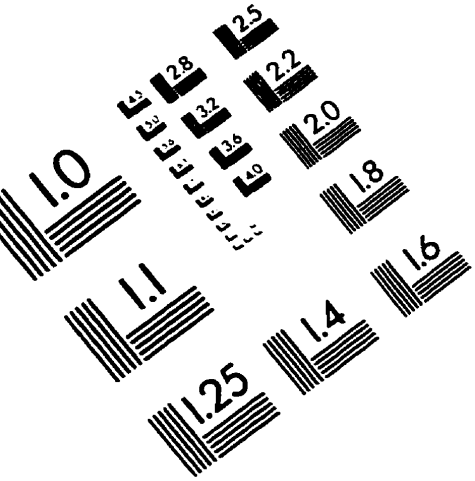
| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| N34.5W24;16dbs;F4;TP13;19/7/90 | 19 | L. canadensis | t. astragalus | I+ | 1 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 21 | goose sp. | humerus | I+ | 1 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 21 | goose sp. cf. B. canadensis | coracoid | I+ | 1 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 22 | goose sp. cf. B. canadensis | coracoid | I+ | 1 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 23 | goose sp. cf. B. canadensis | vert c | I+ | 1 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 24 | goose sp. cf. B. canadensis | vert c | I+ | 1 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 7 | Phoca sp. cf. groenlandica | skull, temporal | I+ | 1 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 8 | P. groenlandica | skull, temporal | I+ | 1 |
| N34.5W24;16dbs;F4;TP13;19/7/90 | 9 | P. groenlandica | skull, temporal | I+ | 1 |
| N34.5W24;F4;17cmdbs;19/7/90 | 8 | F. Phocidae cf. P. vitulina | tooth, premolar 2, mandibular | I | 1 |
| N34.5W24;F4;17cmdbs;19/7/90 | 8 | F. Phocidae cf. P. vitulina | tooth, M1 mandibular | A? | 1 |
| N34.5W24;F4;17cmdbs;19/7/90 | 8 | F. Phocidae cf. P. vitulina | tooth, premolar 2-4 | A? | 1 |
| N34.5W24;F4;17cmdbs;19/7/90 | 8 | F. Phocidae | tooth, canine | A? | 1 |
| N34.5W24;F4;19-20cmbs;20/7/90 | 22 | F. Phocidae cf. P. vitulina | tooth, premolar 3 mandibular | I | 1 |
| N34.5W24;F4;21cmbs;20/7/90 | 13 | P. vitulina | skull, temporal | I+ | 1 |
| N34.5W24;F4;21cmbs;20/7/90 | 13 | goose sp. cf. B. canadensis | coracoid | I+ | 1 |
| N34.5W24;F4;21cmbs;20/7/90 | 13 | goose sp. cf. B. canadensis | coracoid | I+ | 1 |
| N34.5W24.5;11cmdbs;1/8/90 | 10a | P. groenlandica | femur | I | 1 |
| N34.5W24.5;2/8/90; | bd fish""" | O | H | W L. | |
| N34.5W24.5;L1;1.5-3.5cmbs;2/8/90 | 14a | R. tarandus | metapodial | I+ | 2 |
| N34.5W24.5;L2;1/8/90 | 15a | F. Phocidae cf. P. vitulina | tooth, M1 maxillary | I | 1 |
| N34.5W24.5;L2;1/8/90 | 20a? | P. vitulina | skull, temporal | I+ | 1 |
| N34.5W24.5;L2;1/8/90 | 20a? | P. vitulina | skull, temporal | I+ | 1 |
| N34.5W24.5;L2;1/8/90 | 20a? | P. vitulina | skull, temporal | I+ | 1 |
| N34.5W24.5;L2;1/8/90 | 20a | F. Phocidae | vert c | J | 1 |

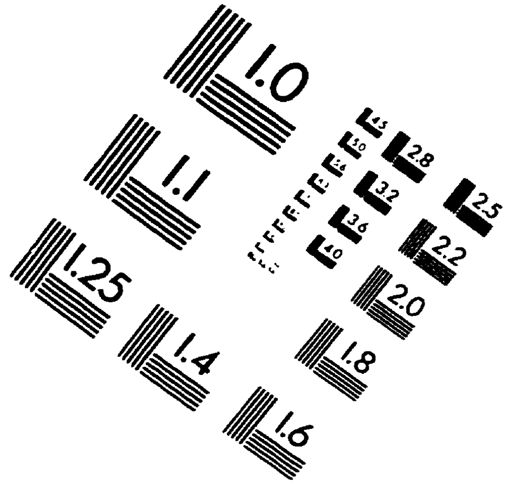
| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| N34.5W24.5;L2;1/8/90 | 20a | F. Phocidae | vert t | J | 5 |
| N34.5W24.5;L2;1/8/90 | 20a | F. Phocidae | vert t | J | 1 |
| N34.5W24.5;L2;1/8/90 | 20a | F. Phocidae | vert l | J | 1 |
| N34.5W24.5;L2;1/8/90 | 20a | F. Phocidae | vert l | J | 1 |
| N34.5W24.5;L2;1/8/90 | 20a | F. Phocidae | vert l | J | 1 |
| N34.5W24.5;L2;1/8/90 | 20a | F. Phocidae | skull, temporal | I | 1 |
| N34.5W24.5;L2;1/8/90 | 20a | Phalacrocorax sp. cf. auritus(by size1/3>gr.c | carpometacarpus | I+ | 1 |
| N34.5W24.5;L2;1/8/90 | 20a | Phalacrocorax sp. | carpometacarpus | I+ | 1 |
| N34.5W24.5;L2;1/8/90 | 20a | Phalacrocorax sp. cf. auritus | phalanx prox digit 2 | I+ | 1 |
| N34.5W24.5;L2;1/8/90 | 20a | Phalacrocorax sp. cf. auritus | vert c 13 | I+ | 1 |
| N34.5W24.5;L2;1/8/90 | 20a | Phalacrocorax sp. | skull, occipital | I+ | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | F. Phocidae | t. astragalus | J | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | F. Phocidae | ilium | J | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | F. Phocidae | skull, occipital | J | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | F. Phocidae | femur | J | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | F. Phocidae | phalanx prox | J | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | L. canadensis | t. calcaneum | I+ | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | L. canadensis | rib | I+ | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | G. morhua | vert ant abdominal (c3) | I+ | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | F. Phocidae | vert t | J | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | sea duck cf. eider or white-winged scoter | scapula | I+ | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | Eider sp. (no king eider coracoid for ref) | coracoid | I+ | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | Eider sp. (no King coracoid for ref) | coracoid | I+ | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | goose sp. cf. B. canadensis | vert c 9 | I+ | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | goose sp. cf. B. canadensis | vert t | I+ | 1 |

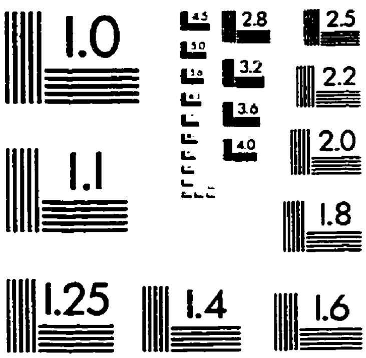
| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | goose sp. | vert t | I+ | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | Phalacrocorax sp. | phalanx wing | I+ | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | Phalacrocorax sp. | phalanx middle foot | I+ | 1 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | F. Phocidae | vert | J | 2 |
| N34.5W24.5;L3;10-15cm;2/8/90 | 1a | F. Phocidae | vert t | J | 1 |
| N34.5W24.5;L3;19-15cm;2/8/90 | 1a | F. Phocidae | vert t | J | 2 |
| N34.5W24.5;L4;15-20cm;2/8/90 | 5a | P. groenlandica | skull, temporal | I+ | 1 |
| N34.5W24.5;L4;15-20cm;2/8/90 | 5a | Eider sp. | coracoid | I+ | 1 |
| N34.5W24.5;L4;15-20cm;2/8/90 | 5a | Eider sp. prefer common | scapula | I+ | 1 |
| N34.5W24.5;L4;15-20cm;2/8/90 | 5a | Phalacrocorax cf. d-crested(size&<rugose great) | tarsometatarsus | I+ | 1 |
| N34.5W24.5;L4;15-20cm;2/8/90 | 5a | sea duck sp. eider or scoter | vert l (ant) & t (post) fused to ilium | I+ | 1 |
| N34.5W24.5;L4;15-20cm;2/8/90 | 5a | M. americana | vert t | I+ | 1 |
| N34.5W24.5;N34.75W24.38;L2;7.5cmbs | 3a | P. groenlandica | skull, temporal | I+ | 1 |
| TP11;HP5;wall fill;4/10/89 | 130 | P. groenlandica | skull, temporal | I+ | 1 |
| TP11;HP5;wall fill;4/10/89 | 131 | P. groenlandica | malleus | I+ | 1 |
| TP11;HP5;wall fill;4/10/89 | 132 | P. groenlandica | stapes | I+ | 1 |
| TP11;HP5;wall fill;4/10/89 | 140 | F. Phocidae | femur | J | 1 |
| TP11;HP5;wall fill;4/10/89 | 141 | F. Phocidae | ulna | J | 1 |
| TP11;HP5;wall fill;4/10/89 | 142 | F. Phocidae | rib, 1 | J | 1 |
| TP11;HP5;wall fill;4/10/89 | 143 | F. Phocidae | scapula | J | 1 |
| TP11;HP5;wall fill;4/10/89 | 145 | F. Phocidae | vert t | J | 1 |
| TP11;HP5;wall fill;4/10/89 | 146 | F. Phocidae | EPI | J | 1 |
| TP11;HP5;wall fill;4/10/89 | 147 | F. Phocidae, large | scapula | I | 1 |
| TP11;HP5;wall fill;4/10/89 | 148 | P. vitulina | malleus | I+ | 1 |
| TP11;HP5;wall fill;4/10/89 | 149 | P. vitulina | skull, temporal | I+ | 1 |

| Provenience | Cat. No. | Taxon | Element | Element Age | Qty |
|---|---|---|---|---|---|
| TP11;HP5;wall fill;4/10/89 | 215 | F. Phocidae | vert ca | J | 1 |

# IMAGE EVALUATION TEST TARGET (QA-3)

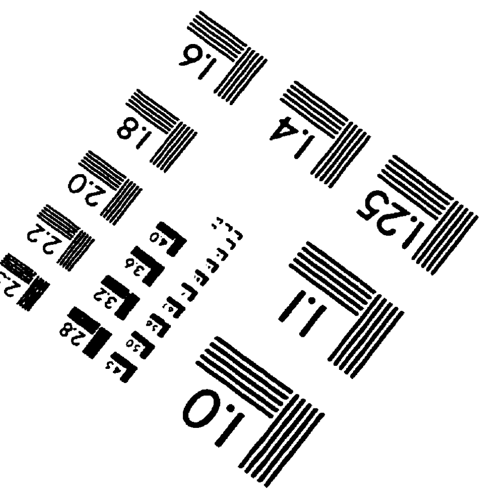


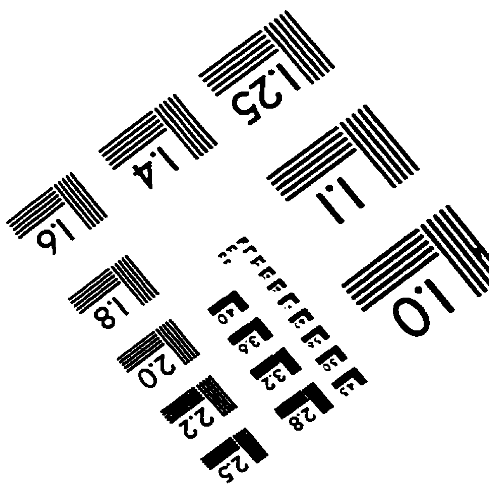





150mm

6″





APPLIED IMAGE . Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989