ARCHAEOLOGICAL STUDIES IN THE KUUSAMO REGION

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Archaeological Survey of the Finnish-Russian Border and the Oulanka River Valley

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Over 150 km were surveyed and more than 80 archaeological sites were documented in a systematic survey of the Finnish-Russian border and the Oulanka River valley by a multinational group of researchers during the month of August, 1998.

I. Introduction

The ‘Archaeological Survey of the Finnish-Russian Border’ was born of the idea that the substance of archaeology, meaning the discoveries which make it a worthwhile endeavor, is as important to the understanding of ourselves as it is to understanding the past. The project was designed as a joint venture between scholars from State University of New York at Buffalo, the University of Oulu, Finland, Oxford University and Cambridge University. This collaborative structure was fundamental to the development of the project because the members of the team and their relation to the material, landscape, politics, and culture of the border region made the project a success. This interaction was as anthropologically interesting as the archaeological evidence itself.

The survey was designed to collect archaeological data from the Kuusamo region of the Finnish-Russian frontier zone, an area that has never been rigorously studied archaeologically. The primary obstacle was one archaeologists have faced repeatedly: how does one design a survey when there is little knowledge of what to expect from the terrain and material? The answer is admittedly disconcerting; you make it up as you go along! Sometimes this is an easy task. By consulting maps, making restricted excursions to the study area, and by reading everything available about the area, the archaeological team can develop a useful approach. This project was unique in that the survey area was sensitive for numerous reasons that lead to complications when developing a cross-cultural strategy that was both scientifically rigorous and culturally balanced. This point must be stressed because the interpretation of the record, the practice of survey, and final output of the results are all a product of the unique environment (social, political, and ecological) in which the study was situated.

The Northern Finnish-Russian border is an imposing marker in the political geography of Fennoscand-
dia. Historically it has been the site of wars, and prolific changes of power between such nations as Sweden, Finland and Russia. At the cultural level there is even more detailed variation in the position and imposition of this border. The initial impetus for this study was the overall lack of a long term 'paleo-cultural' understanding of this dynamic border area.

The surveyed area included a 300-500 m wide transect in the Finnish frontier zone within the county of Kuusamo, located some 100 km south of the arctic circle in eastern Finland (Fig. 1). To augment the frontier survey, another 300-500 m wide transect was designed to study the riparian valley of the Oulanka River. This transect began on the border where the Oulanka river flows into Russia, and plodded westward into Finland, winding along the river into the Oulanka National Park. Over 150 km were covered and more than 80 sites were discovered.

The bulk of the prehistoric evidence recovered revealed intense human interaction with the landscape. Site types such as hunting pits, cooking pits, and hut depressions were regular. In addition to prehistoric evidence, historical material was also recorded. Numerous structures were identified and correlated with the historical development of the broader landscape.

The Finnish-Russian Border Project attempted to consider all the factors involved in the development of border contexts. Both ecological and socio-cultural influences were included in interpretations. Furthermore, one may not ignore the inherent influences the various archaeologists bring to a project of this nature. This is especially significant in considering the still potent tension which exists between Finns and Russians, and indeed between Americans and Russians. There are the normalized biases and personal opinions which may impact the process of Euro-American archaeological investigations along the Russian border. Perhaps, even more significant may be the innate, experiential reactions which comprised so much of the cultural interaction between the Finnish and American archaeologists. Finally, in this report we would like to accomplish three goals:

1. To present new archaeological and historical data concerning the 'paleo-cultural' developments of the Finnish-Russian border area.
2. To examine the social and cultural impacts of working along a border zone.
3. To expose the unique aspects of archaeological field work that produce interpretations and explanations of data.

Thus this report is interested in incorporating the element of time into our practice, interpretation, and writing of archaeology, hopefully breaking the trend of synchronized reports of human culture.

II. Project objectives

There are five main objectives within the broader goals of the Archaeological Survey of the Finnish-Russian Border. The first objective is to access the archaeological potential of the Frontier Zone and the Oulanka River Valley. The second is to fill in a 'gap' in the archaeological record that currently exists around the Kuusamo area. The third is to collect supplementary micro-environmental data for the area that is surveyed archaeologically. The fourth objective is to develop and test methodologies for conducting an archaeological survey in a highly unique geographical and political environment. The final objective is to explore the nature of borders as natural and political phenomena through an archaeological perspective.

The Kuusamo area is situated on one of the most important social, ideological, and political divisions that has existed this century. In fact, the importance of this border extends far back into history, and as we suggest, to prehistory. The border between Finland and Russia has long been a key component in demarcating the "Eastern" and "Western" spheres of politics, culture, and religion in Europe and, more recently, on a global scale. Its exact location has been renegotiated many times in the past but the environmental zone in which the border is situated has always found itself being used as just that: a border.

The field project is an archaeological survey being carried out by archaeologists. However, there is a rather complex research agenda attached to the project. In terms of general archaeology, the survey is aimed at both accessing the archaeological potential of the region and increasing the overall archaeological data set for the area. The Frontier Zone is an area that has been off limits to researchers for most of the past century. Therefore, no archaeological work has been carried out at all in it. Working in the Frontier Zone not only provides a survey area in which to run a standardized transect, but through recording all signatures (including right up to modern times) a material record of human activity conducted in the border area from prehistory to the present can be obtained. The Kuusamo area in general is an area of high archaeological potential. It is near a hydrological divide where water flow is directed to the White Sea in the East and the Gulf of Bothnia in the West. Also, the Oulanka River is known to have been an important conduit between the cultures living in the White Sea area (and thus indirectly extending further to the east) and the cultures residing along the Gulf of Bothnia (and thus extending into the Baltic region). The Oulanka River has been a long-term focal point for cultural contact, movement of populations, diffusion of ideas, and exchange of resources and material culture. It is also an area that holds interesting potential for archaeological/anthropological studies of the Saami people. In spite of this, very little actual field research has been conducted in the area. There was one survey conducted in 1973 which catalogued sites found through ground walking survey. However, this work was never published and has never really been followed up or added to.

Environmental

The presence of the Oulanka National Park and the Oulanka Biological Station of Oulu University has long attracted environmentally interested scientists to the Kuusamo area. Because of this, there is a large and comprehensive corpus of botanical, faunal, geographical, geological, etc. information for the area. In order to supplement this data on a micro-scale level and to achieve a more complete understanding of the physical nature of the border region as it existed in the past and as it exists today, each of the teams collected detailed environmental information. An environmental data form was completed for every kilometer of transects walked by the teams. This included a standardized form, a hand drawn map of the area, and the collection of soil samples using an auger. Also, a field journal kept by each team indicates possible areas of interest such as impressive geographical features, outcrops of bedrock, exposed vertical faces, and sources of important raw materials.

Theoretical

The presence of the border as both a contemporary and historical entity impacted the theoretical and methodological components of the project. In order to conduct a thorough survey of the border zone, the methodologies for data collection had to consider both the political obstacles and the physical realities of working in the Frontier Zone. Special permission had to be granted from the Finnish Border Guards for access to the Frontier Zone. Photographs could not include any of the territory on or across the Russian border. Also, those researchers working in land controlled by the Oulanka National Park had to follow park specific regulations concerning soil samples and all sub-surface exploration techniques. The methodology had to insure that an appropriate sample of the Frontier Zone was surveyed so the
intellectual elements of the project could be satisfied.

Logistics

The Kuusamo region was chosen to be the study for a variety of reasons, many of which were not related to the intellectual interests of the project. It is ideally situated on the border area near the Oulanka River. Operating out of Kuusamo made physical accessibility feasible. Second, in order to achieve all of the in-field objectives for data recording and analysis, a base camp was needed that contained adequate computer facilities and laboratory space. The base camp at the Kuusamon Kansanopisto satisfied these requirements. The local town provided a good source of cooperative and made the survey possible by providing access to the border, information and frequent logistic support.

III. Environmental and cultural setting to the Kuusamo district

Kuusamo lies on the Finnish-Russian border just south of the Arctic Circle (Fig. 1). The county has a surface of c. 5 780 km² today, but about one-fourth of its original territory was ceded to Russia at the end of World War II. The region is unique in many ways. It can be described as a mosaic of complex ancient tectonic activity, glacial-related features, intense post-glacial fluvial erosion, and peat formation. The result is a dynamically changing landscape in terms of both vegetation and relief, a complex archive of geological and environmental events that has barely been disturbed by human activity.

Much of the long and complicated geological history of the region can be read from the powerfully folded bedrock and the varied geomorphology and sediments. The environmental conditions we see today are somewhat different to those existing back 3 000 years ago, let alone 10 000 years ago. This paper presents an overview of the environmental and cultural history of the study area (Fig. 3).

The transect zones in 1998

The Kuusamo border project operated in different kinds of environments: the Finnish-Russian border, and the Oulanka river valley. The border zone lies in a combination of upland raise, ridges, lakes and streams, and vast tracts of wetland and bogs. Most of the drumlins, eskers, and lakes are a direct product of glacial processes and they are oriented very much accordingly. The bogs range from very wet open fens to drier pine-growing peat bogs. Due to an unusual rainy summer, the water table was over a half a meter higher than normal, making many bogs impassable and turning creeks into small rivers. Another factor hindering movement was the dense new growth on the clear-cut areas along the border.

River valley landscape differed considerably from that at the border. Most of it lay within the Oulanka National Park, which is a natural reserve containing mainly full-grown pine-spruce forest. The survey encompassed the area from the river shore up to the crest of the flanking terraces and ridges. The profile of the powerfully meandering river valley ranged from gentle rising slopes to deeply cut glacial/alluvial sediments and sheer bedrock cliffs. Where the shore was steep the forest reached close to the shore, but it was otherwise blanketed in shrubbery or meadows in the flood plains. Landslides were often observed where river erosion was cutting high sandy shore terraces. The glaciofluvial, eolian and alluvial soils were generally well drained and did not hinder movement and the same applies to the full-grown taiga in the Oulanka National Park. The main obstacle was the steep and rapidly changing relief that made going difficult.

Before the Holocene

The Fennoscandian Precambrian shield is one of the oldest and most stable geological formations of the world. During its long existence the region has slowly drifted southwards from a high northern latitude similar to the present one some 2 700 million years ago, to the tropical zone during 2 000-1 300 million years ago, to end by the Antarctic Circle some 950 million years ago. Finally, it drifted back northwards to reach its modern position some 50 million years ago.

The Finnish bedrock bed shows evidence of the collision of two major tectonic plates: the older Pre-Swecocarelian plate in the south and the somewhat younger Carelian plate in the north. In the Kuusamo area these are represented by the southern siliceous-rich basement gneiss complex with an age of 2 700-2 800 million years and the northern Carelid schist formation containing metamorphized sediments deposited 2 100-2 300 million years ago (quartzites, conglomerates, mica slates, dolomites, tufts). The plate collision led to the Swecocarelian orogeny about 1 800 million years ago. The resulting Himalayan-like massive was gradually eroded to a peneplain and, today, only the schistose bedrock and the great thickness of the local lithosphere remains as evidence of the great mountain chain that once rose

The mountains were gone long before the Pleistocene ice sheets began to scour the region. The ice eroded away the loose sediments and much of the eroded topsoil, sculpting the harder bedrock into streamlined fells and ridges. In fissures and places protected by elevations from glacial erosion, soft rocks and organic deposits survived. This is attested by organic deposits of interglacial and interstellar age between till layers. One of these, observed below 4.8 m of till in neighboring Taivalkoski (Fig. 1) was carbonized dated to 45000-55000 BC. Another interesting find is a reamber amulet with a radiocarbon age of 34000 BC from Tomio, some 200 km west of Kuusamo (Fig. 1). All these finds indicate that the country was ice-free during interglacial and major interstellar times (Korpela 1969, Vasari 1978, Donner 1988, Nunez 1991).

The work of the last ice-sheet is reflected by the rolling topography typical of a glaciated environment and the effects are still being felt in the form of isostatic uplift (c. 40 cm/century). Much of the Kuusamo area is characterized by its ENE-WSW oriented drumlin assemblage. In addition to these clear flowing-ice forms there are dead-ice formations and numerous glacial-fluvial deposits. What makes all these formations unique is that, unlike most of Finland, these glacigenic features have not been subsequently modified by submersion in the waters of the Baltic basin. On the other hand, there has been considerable fluvial erosion and deposition along the local river valleys (Donner 1976, Vasari 1978, Donner 1997).

Holocene environments

The study area falls within the so-called supraglacial, which always remained dry land after the retreat of the ice-sheet. This made it possible for plants, animals and humans to spread into Finland via the study area at a very early stage. In fact, the Kuusamo district and, particularly, the Oulanka river valley have always served as a major route connecting the Baltic and White Sea basins. The present climate of Kuusamo is rather harsh, with a mean annual temperature within 0-1°C and above-freezing temperatures during barely half a year. The climate is continental with great seasonal and daily temperature fluctuations. Mean annual snowfall is 80-90 cm. The amount of daylight changes dramatically from summer to winter. Days are short and cold in winter and long and fairly warm during the summer months. However, despite the extreme conditions, the milder microclimate of sub-facing rocky cliffs and slopes allows the growth of many warmth-seeking plants (Vasari 1978, 1979, Koutaniemi 1979).

The climate was probably more maritime earlier in the Holocene, when Kuusamo lay closer to the Baltic basin and enjoyed the ameliorating effects of a large water body. Milder conditions existed during the climatic optimum (7000-3500 cal BC), when several now-gone warmth-loving species grew in the region (Donner 1976, Vasari 1978, 1979).

Kuusamo district falls within the northern boreal forest or taiga zone. The forest is often sparse and park-like and the most common lower vegetation consists of crow berries, blueberries and lingon berries. The dominant tree is pine, which occurs often mixed with spruce. During the climatic optimum the birch and alder were much more abundant than today. The rate of paludification or bog formation increased considerably as the climate gradually began to deteriorate after 5000 years ago. These conditions gave rise to the so-called slope bogs, which are typical of the region. There are several bog types in the area, ranging between fairly dry tree-growing bogs to very wet impassable bogs (Vasari 1965, 1978).

The fauna of the Kuusamo district comprises mainly members of the Siberian group, with some members of the Arctic and European groups. There are over 30 species of mammals in the study area, among them the arctic fox, bear, beaver, elk, hare, lynx, otter, red fox, reindeer, squirrel, wolf, wolverine and several fur bearers and small mammals. Reindeer may have entered the district from time to time during the past 8000 years as it does today. Reindeer are common in the Kuusamo region, where they are now herded for economic purposes. The numbers of most predators and fur bearers has considerably dropped due to human persecution or exploitation. The most important game birds are several species of migratory waterfowl and a few autochthonous forest species. Kuusamo has always been famous for its fishing waters, which are rich in trout, grayling, pike, burbot and two species of whitefish. The described wild fauna was basically the same during prehistoric times (Sivonen 1977, 1978, Vasari 1979, Hakala 1997, Ukkonen 1997).

Cultural and environmental history

The Kuusamo archaeological record is rather sketchy due to the lack of field research. In contrast, the environmental history of the district during the Holocene is well known thanks to decades of research activity by the locally based Oulanka Biological Station run by the University of Oulu. As an area that became supra-aquatic when it was liberated from the ice sheet, some 11 000-10 500 years ago, the Kuusamo district was open to pioneer spread of flora and fauna at an early stage. Sites in the well-surveyed neighboring counties of Suomussalmi and Hyrynsalmi have yielded hearth radiocarbon-dated to around 8000 cal BC, indicating that Mesolithic hunters reached the area shortly after it became ice free. The absence of such early evidence from the Kuusamo district is more likely to be due to lack of systematic archaeological survey than to a true absence of human activity. An approximate reconstruction of the development of the Kuusamo area is presented below on the basis of paleoenvironmental, archaeological and ethnographical data from Kuusamo and neighboring counties (mainly in Vasari 1978, Hicks & Hyvärinen 1997, Sarvas 1986, Huotari 1988, Nunez 1990, Hyvärinen 1997, Ukkonen 1997).

As the ice sheet border retreated from the Kuusamo district in the 9th millennium BC (cal), the virgin terrain was colonized by light-demanding, wind-resistant pioneer plant species (Artemisia, Dryas, Empetrum, Oxystea, Saxifraga, and members of the Caryophyllaceae, Chenopodiaceae and Ranunculaceae families). With this environment came some new forests offered more adequate resources, allowing local human groups to adjust their settlement patterns in order to maximize harvesting. By the mid-6th millennium BC (cal) settlement patterns had reached enough stability to make the use of pottery feasible. Apparently, the large 30-80 pots were mainly used as storage vessels, made and left behind at seasonal camps to which the groups returned in their annual cycles.

Towards the end of the 5th millennium BC (cal) there was a surge of long distance contacts east and south reflected in finds of exotic materials (flint, amber and copper). Though rare in Kuusamo, such artifacts are known from neighboring areas, and it is very likely that the Oulanka river was one of the routes responsible for their spread both east and westwards. The Oulanka river and its related network of waterways could be easily traveled by boat in summer and by sledge/skis in winter, connecting thus the Ostrobotian coast with the White Sea (Fig. 4).

Spruce arrived in the area by the 4th millennium BC (cal) and it had become a major component of the Kuusamo forest by 2500 cal BC. It’s not clear if this rise of spruce had any direct effect on lifeways, but the climatic deterioration that brought about this event may have (Vasari 1965, 1978, Hicks 1997).

The waterways continued to steer innovations into the region, which was brought into the sphere of the eastern (Russian) bronze age by the mid-2nd
Fig. 4. The waterways that traverse Kuusamo and served as links between the White Sea in the Arctic Ocean and the Botnian Gulf in the Baltic basin.

Fig. 5. Researchers often encountered wildlife along their survey. Here a young reindeer stops to nibble on some lichens in the Oulanka National Park. - Photo: Donna Chesnut.

IV. A general prehistory of Finland

While Fennoscandia was still covered by the Scandinavian icesheet, people were making a living in the surrounding areas. As world climates improved, the ice retreated gradually exposing new territories for occupation by flora and fauna living in its periphery. By the end of the final cold episode of, some 12 000-11 000 years ago, early mesolithic groups occupying the Northwest European Plain had managed to move along the ice free corridor on the Norwegian coast up to northernmost Norway. Similar advances were made by groups on the eastern side of the icesheet slightly later. Finland became ice free during 9000-8000 cal BC and was populated mainly by the later mesolithic groups moving from the south and east during 8500-7500 cal BC (Nunez 1987, 1997, Matiskainen 1993a, Schulz 1996, 1998).

Finland’s prehistory can be grouped in various ways on the basis of culture phases, economies and/or environmental sequences. In this brief outline we have preferred to do it the following manner:

1. Mesolithic or preceramic, 8500-5300 cal BC
2. Neolithic or pottery mesolithic, 5300-3000 cal BC
3. Early Metal Age, 1800 BC - AD 300
4. Late Iron Age, AD 300-1200

The mesolithic or preceramic period

The most characteristic feature of this period is the absence of pottery, hence preceramic period. The Finnish mesolithic, which has also been referred to as the Suomusjärvi culture, may be divided into two phases on the basis of both culture and prevailing environments: early or fresh-water preceramic and late or marine preceramic.

Early or fresh-water preceramic (c. 8500-6500 cal BC)

This was a period of major environmental changes involving the final ice retreat and the powerful isostatic uplift and shoreline regression that followed. At the time the Baltic basin was a huge lake, with the peculiarity of holding a relict ringed seal population. The archaeological material from this early period is characterized by an industry of chipped quartz and a series of wholly/partially polished-stone artefact forms. Among the latter are a variety of wood-working tools (axes, adzes, chisels, gouges), slate points and spherical perforated stones that may have served as digging-stick weights. Several finds indicate the use of boats, sledges and fishing nets by 8000 cal BC, and faunal remains point to the exploitation of forest and fresh water resources. The most common game seems to have been the elk/moose, but beaver, fish, seafowl and ringed seals seem to have been important as well (Luho 1967, Särkilahti 1981, Nunez 1987, Matiskainen 1989, Edgren 1993, Huurre 1995).

Late or marine preceramic (c. 6500-5300 cal BC)

A series of favorable environmental events seem to have had a positive effect on Finnish preceramic...
The Neolithic period

Pottery, in the form of large egg-shaped vessels, was introduced during the second half of the 6th millennium BC. By then settlement patterns had apparently reached enough stability to make its utilization feasible. However, despite the term neolithic, agriculture did not reach Finland until the late 3rd millennium cal BC. For this reason, the first 200 years of this period are better described as pottery mesolithic. The long 3000-year period may be divided into an early, middle and late phases (Nunez 1990, Vuorela & Hicks 1996).

Early neolithic or Comb ware phase (c. 5300-3500 cal BC)

The term Comb ware stems from the impressed decoration on the pottery. The egg-shaped pots were large (25-80 l) and probably meant for food storage purposes. All suggests that pottery making was simply adopted by the local inhabitants. Prototypes can be found in territories to the east, which hold close affinities to early Finnish pottery. This was a time of close connections in northeastern Europe, which is attested by imports of such exotic goods as flint and copper from Russia and amber from the East Baltic. Despite the apparent unity of the Comb ware world, clear regional differences can be observed in pottery styles within Finland. Like in the preceramic period, dwelling sites tend to be located by the shores of the sea, lakes or rivers. Dwelling sites and building structures can be seen as continuation of preceramic traditions. One striking difference is the heavy reliance of marine resources, with seals making up two-thirds of the faunal remains. Rock art in the form of monochrome ochre paintings on water's edge cliffs comes as an addition to the sculpted mobile art of animal head effigies. Anthropomorphs and elk/moose representations dominate in the rock art. The graves from this period could also be seen as a direct continuation of preceramic burial rites (Nunez 1990, 1995, Edgren 1993, Vuorela & Uino 1997).

Middle neolithic (c. 3500-2500 cal BC)

The territorial unity and stability reflected by the archaeological material of the previous phase is disrupted by diversification seen by the development of regional cultures that arise through local specialization and/or foreign influences. By 3500 cal BC the country's interior experienced the spread of asbestos tempered wares and in North Ostrobotnia there is a rise of clusters of semisubterranean houses in village-like pattern and of the large stone enclosures known as jättiläkirko. In the southwestern Finnish coast the late phase of the Comb ware culture continued to exist, but shared the territory with an intrusive culture of East Baltic affinities: the Corded ware or Boat ax complex (c. 3200-2500 cal BC). The Boat ax people were pastoralists and/or agriculturists elsewhere in Europe, but there is no concrete evidence of such activities in Finland at this time (Carpelan 1979, Edgren 1993, Huurre 1995, Nunez & Uino 1997).

Late neolithic (c. 2500-1800 cal BC)

The archaeological record reflects some important changes during the final phase of the Finnish neolithic. Inland and in the Ostrobotnian coast asbestos tempered ware continued to be used, but there is a decline in imported exotic goods and, possibly, in settlement organization itself. Semisubterranean houses no longer occur in village-like clusters and the jättiläkirko structures seem to fall out of use by 2000 cal BC. In southwestern Finland, the few centuries of close contact between the Comb ware and Boat ax peoples resulted in a new hybrid culture, the Kiskas culture (c. 2000-1500 cal BC). The first evidence of agriculture in the form of cereal pollen is known from a few sites from this period. It is possible that some farming had been introduced earlier by the Boat ax people, but there is no evidence of it prior to 2400 cal BC. The sporadic occurrence of cereal pollen during this period suggests slash-and-burn practices, a cultivation method that was used in some parts of the country until a very recent past (Meinander 1954a, Edgren 1993, Huurre 1995, Vuorela & Hicks 1996).

The Early Metal Age

The introduction of bronze and later iron had little impact on the economy and lifeways of the Finland's inhabitants during this period. Bronze was a rare and precious commodity and the more complex iron technology did not become widespread until the first millennium AD. Stone and bone artefacts remained fairly common for a long time. Agriculture gained some importance in certain parts of the country, possibly with some settled farmers and arable fields in southwest Finland by the first millennium BC. The early Metal Age may be divided into two major phases, the Bronze Age and the early Iron Age (Meinander 1954a, Edgren 1993, Huurre 1995, Vuorela & Hicks 1996).

Bronze Age (c. 1800-500 BC)

During the Bronze Age Finland was under the influence of two major foreign culture centers: the Scandinavian bronze culture complex exerted its influence in the coastal southwest and while most of the interior fell within the sphere of the Russian-based bronze complex. Recent finds suggest that in Finland eastern metallurgy preceded its Scandinavian counterpart by a couple centuries. The east-west/coast-inland dichotomy is also observable in the pottery types and burial rites. The tradition of burying the dead under cairns, which may have had its start during the late neolithic, became widespread during the Bronze Age. Sometimes around 1000 BC there is a change from inhumation to cremation, which may be connected with a change in religious beliefs. (Meinander 1954a, Carpelan 1979, Edgren 1993, Huurre 1995).

Early Iron Age (c. 500 BC-AD 400)

This period is characterized by very few metal finds in both Scandinavia and Finland. This phenomenon may have been due to a disruption of the copper/trade networks by the Celtic migration. There were iron ore deposits in Finland, but iron technology was complex and spread slowly. Whatever the reason, metal finds from the second half of the first millennium BC are very rare in Finland, and Roman historian Tacitus (98 AD) describes the Finns as lacking metals and having bone tipped arrows. This lack of datable metal finds had previously been explained as an exodus of the population due to a climatic deterioration in the 1st millennium BC, but more recent research has shown this theory to be untenable. There are indications of continuous settlement throughout this period, even of an intensification of arable farming practices in southern Finland. The foraging groups living in the interior at this time
are often referred to as Proto-Saami and are thought to be the direct ancestors of the present Saami (Meinander 1969, Edgren 1993, Carpelan 1975, Huurre 1995, Vuorela & Hicks 1996).

The late Iron Age

During this period (c. 400-1200 AD) southern Finland experienced the rise of the Finnish peasant culture from which the historical Finns eventually derive. There is a consolidation of a farming population in the south, while the rest of the country seems to remain the territory of hunting-fishing groups. It is also believed that the beginning of Fennoscandian reindeer herding is to date to this period. Various influences from the Christian world can be seen in the Finnish archaeological material towards the end of the 1st millennium AD. Archaeologically the spread of Christianity can be inferred from the gradual shift of traditional pagan-fashion burials in mounds and cremation fields to Christian inhumation burials on parish churchyards during the 11th and 12th centuries (Edgren 1993, Purhonen 1999).

The final conversion of Finland took place through crusades movements based in Sweden during the 12th and 13th century AD. Christianity and the Swedish kingdom that spread it brought Finland gradually into the historical period.

V. Kuusamo in relation to Finnish prehistory

Introduction

While very little archaeological research has focused on the prehistory of the Kuusamo area prior to the Finnish-Russian Border Project, there are a few aspects of the ancient lifeways which are documented. One begins with a discussion of the origins of the Finns and Saami and their genetic, linguistic, and cultural boundaries. Next, an outline of Kuusamo's prehistory is offered. From the Stone Age through the Saami Iron Age, prehistoric Kuusamo seems to have been occupied continuously by groups of indigenous peoples some of whom can first be called Saami people in the early metal period. Finally, there is a depiction of what is known of the Saami way of life in Kuusamo during the Middle Ages. This ethnographic data perhaps enables us to better understand the practices of the Kuusamo Saami's prehistoric ancestors.

The Origins of Finns and Saami

The first evidence of human occupation in southeastern Finland has been dated to 8500-8000 BC (calibrated radiocarbon dates), during the pre-boreal period. These Mesolithic inhabitants probably arrived in Finland from two directions: 1) from the northwest, where on the western coast of Norway the Komsa culture and their ancestors (Fosma) had been living since at least 9000 BC (calibrated); and 2) from the south and the southeast (Schultz 1996, Nunez 1997, 1998).

Archaeological evidence (Nunez 1987, 1997, Dolukhanov 1989) and typical anthropological evidence (Niskanen 1994) have given support to the theory that the first occupants of Finland were descendants of the Upper Paleolithic populations who previously occupied the region between the Carpathian Mountains and the Volga River. Expanding to the north, northwest, and northeast, they eventually came to inhabit northeastern Europe as far west as the Oder River, to the Ursals and beyond. Haeussler's (1995) study of dental characteristics in the Mesolithic period Olenj Ostrov material indicate descent from the Upper Paleolithic populations of Carpathian-Velga region. In craniometric research of European populations, the Finnish crania facial configuration has been found to differ the least from the Upper Paleolithic European model, indicating that Finns descend largely from the pre-farming inhabitants of Europe (Niskanen 1998).

The traditional explanation is that the Finns had arrived in Finland from Estonia during the first centuries AD (Hackman 1905). Since 1980, however, most archaeologists have argued that the Finns descend from much earlier Comb Ceramic period people of the region (Tyrénmin Symposium of 1980, Proceedings 1984). If so, no least post-glacial inhabitants of Finland (Nunez 1987, 1989, 1990, 1998, Salo 1996, Juulina 1996, 1997). Genetic comparisons of the Finns, Estonians, Swedes, and Saami indicate that the Finns' ancestors separated from Estonians' ancestors at the latest during the Corded Ware period around 3500 BC (calibrated). More exact estimation depends on the unknown genetic structure of the people known as the Lapps of the southern half of Finland, who were assimilated into the Finnish gene pool during the early medieval period, around 1100-1200 AD (Niskanen 1997).

The modern Saami of northern Fennoscandia probably originated mainly from the people who arrived in northern Finland via the coast of Norway. According to Haeussler (personal communication M. Niskanen), dental characteristics of the modern Saami differ considerably from those of the Olenj Ostrov specimens, making it unlikely that the Saami of northern Fennoscandia descend from the Mesolithic period inhabitants of more southern regions. There are no gradients of the genetic characteristic to Saami people among neighboring ethnic groups (Hakala 1991:17). In the view of M. Niskanen, the genetic markers that set the Saami apart as a subset (Europeans may have been inherited from the Komsa culture people. However, since the genetic structure of people known historically as Lapps farth south of the modern Saami area in Finland is not known, we do not know if they were more closely related to the northern Fennoscandian Saami or to the non-Saami Fennoscandians (Niskanen 1997). The Saami inhabitants of Kuusamo are included in this group whose genetic structure is not known. Archaeologists consider that the indigenous people in northern Finland have been Saami approximately since the early metal period (Carpelan 1984:166).

The so-called Lapps further south in Savo may have been genetically even closer to Savo neighbors. Although according to tradition and historical records (Wegelius 1878) there were Lapps living in central Finland and Savo until quite recently, Huurre (1983) claims that these Lapps were not the same as modern Saami. Instead, he says that backwoods people were in many places called Lapps even if they were not farmers but hunters and fishermen, whether or not they were Saami people. In Kemi, in the early 1800s all the people who did not own land or cattle were called Lapps, regardless of their race and language, but Saami farmers were not considered Lapps.

In the Kuusamo region, the earliest settlement occurred as early as 8000 BC (calibrated) from the south and southeast. Contacts between this group and the proto-Saami of northern Finland probably took place at Inari starting 7800 BC (calibrated), when groups expanding south from further south reached the region (Schulz 1996). The location of Kuusamo on the water route between the White Sea and the Gulf of Bothnia means that Kuusamo has been a crossroad from prehistoric times. Thus the ethnicity of the inhabitants is at best a complex question, although the rich local historical traditions most commonly identify the early inhabitants as Saami (Saarinen 1986:16-18).

The northern Fennoscandian Saami most likely adopted the Uralic language from their southern neighbors (Pankrushev 1978, Gurina 1987). Since the Suomsuojärvi culture extended as far north as Inari, exchanges between the earliest settlers in various parts of Finland were likely to have taken place.

Both the Kuusamo and the Savo Lapps, however, were linguistically Saami, given the evidence of place names in both areas. Muurimäki (1992) argued that certain Saami-language place names (in particular the Lappi-place names, Lapinlahi, Lapinmäki, etc.) which are found throughout Savo, and other place names that are derived from Saami terms constitute evidence of Saami populations having existed even as far as southern Savo. These Lappi-place names occur not only in Savo but also in many other parts of Finland as well. Häkkänen (1996) and Lehtola (1994) question the assumption that Lappi-place names prove the Saami language to have been spoken at those places. If, however, such evidence is accepted, then one might hypothesize that the Saami language spoken in the Savo region represents a stage in the continuum of mutually intelligible dialects which most likely connected the Finns in the south and the Saami of northern Fennoscandia, even perhaps as far south as across the Baltic, given the relatively short time in which the northward expansion took place.

Prehistoric Kuusamo

1. The Stone Age in Kuusamo

Our knowledge about the hunter-gatherers who first occupied Kuusamo is not complete, as very little archaeological research has been done in the area.
The earliest references to Kuusamo's ancient history are by Ligna (1770), Snellman (1887), and Karvonnen (1900). More recently, T. E. Erséko (1975) compiled a survey of the ancient sites in Kuusamo. The information currently available about Stone Age Kuusamo is discussed below as it relates to Finland's prehistory.

Kuusamo's oldest artifacts, primitive axes, are dated in the Mesolithic (Marttunen 1989). Leaf-shaped slate spear points and massive mace heads, as well as leaf-shaped slate points, are the earliest artifact type of the Mesolithic (Marttunen 1989). More recently, Era-Esko (1975) compiled a survey of the ancient sites in Kuusamo. The leaf-shaped slate points are the earliest artifact type of the Mesolithic (Marttunen 1989). The leaf-shaped slate points are the earliest artifact type of the Mesolithic (Marttunen 1989). The leaf-shaped slate points are the earliest artifact type of the Mesolithic (Marttunen 1989). The leaf-shaped slate points are the earliest artifact type of the Mesolithic (Marttunen 1989).

The earliest farming in southern Savo dates from 480 AD and the first permanent farming in southern Savo from 1000 AD (Pirinen 1988:382-383). Recent pollen analysis dates the earliest site in the Kuopio region at around 1300-500 BC (Tavaszinsah et al. 1998:232). Solanite (1988:14), which is common in the northern parts of the Finnish Lake region (Savo), the conditions are less favorable for the growing of rice than for the growth of rice. This is true for the growth of rice. This is true for the growth of rice. This is true for the growth of rice. This is true for the growth of rice. This is true for the growth of rice. This is true for the growth of rice. This is true for the growth of rice. This is true for the growth of rice. This is true for the growth of rice.

Thus, the swidden cultivation in Savo was an adaptation allowing the farming of marginal lands. Swidden cultivation as a method of agriculture depends on the availability of land, therefore the Savo farmers were forced to extend to their territories northwards. There are about 30 Stone-Age dwelling sites in Kuusamo, one of which has been excavated (Tuovila-Jokela and Kirkkonikkala-Samostenpera). These are both Comb Ceramic culture (Sarvas 1986:63). Erséko's (1975) inventory lists 27 Stone-Age dwelling sites, two Stone-Age through Iron-Age dwelling sites, 19 Saami dwelling sites, and seven 'ancient' dwelling sites. Also listed are nine Lapp cairn sites, seven Saami cemeteries, three 'ancient' graveyards, and six pitfalls.

During the Finnish Mesolithic, dwelling sites were mainly located in coastal areas (Huurre 1995:16). Typical Stone Age dwelling types that leave remains include the conical tent or lodge and the semi-subterranean Madeneva-type structure described by Nunez and Uino (1997). Dwelling sites in Kuusamo were located on sheltered shores, at river mouths, and along narrow straits, usually on southern shores. Winter village dwellings of the Middle Ages were commonly square-shaped log buildings (Ervasi 1978:29). The Bronze-Age_Iron-Age sites can be differentiated from the Stone-Age sites only when some definite metal artifacts are found, because the sites are not similar. Some of the dwelling sites that are now dated as Stone Age in Kuusamo may possibly have been actually metal period sites (Sarvas 1986:44).

At Arskan moki, on the shore of the river Liijoki, the site was used both in the Bronze Age and in the early Iron Age. The finds from Arskan moki include stone tools and some pieces of broken bronze plate (Sarvas 1986:101-102). The situation is parallel with Upper Savo, where 233 known Stone Age sites contrast with five known early Metal period sites (2-3 of these were also used during the Stone Age). As Lehtosalo-Hilander (1986) observes, more detailed inventories and complete excavations of carefully selected sites are needed to discover the true nature of the inland settlement. "Why would all hunter-gatherers be Lapps and not Siidals?" asks Lehtosalo-Hilander. "If Finns have lived in Finland since the Stone Age, wouldn't it be surprising if some of them had not continued the hunter-gatherer way of life when other Finns had already become slash and burn or field farmers?" (1988:149).

Fishing seems to have been important during the Stone Age because settlements were situated near the water (Huurre 1995, 1998). Dagooe caves, which were used in the Stone Age, have been discovered in lakes and ponds. They are not dated, but the type has remained unchanged at the Stone Age until this century in Kuusamo. Pitfalls for the hunting of wild reindeer are known in many places in Kuusamo. They were often dug in rows on narrow peninsulas. Although the Kuusamo bone material has not been analyzed, the material from other parts of Finland indicate that moose and reindeer were important prey animals and these were supplemented with bear, beaver, fox and several kinds of bird. Hare, lynx, wolf, squirrel were probably also hunted.

Possibly wild boar was available in Finland at that time as well (Sarvas 1986:84-86). Huurre (1995:17) mentions that the game birds included the fowl, the black grouse, and even the swan.

During the early Comb Ceramic period, northern Finland had close contacts to the east and to the southeast, although there are clear indications of continuity in the population rather than a migration taking place at that time. The same is true of the Typical Comb Ceramic period in northern Finland. The spread of this technology does not indicate a significant movement of people from the south to the north (Sarvas 1986:77-78). Many historical linguists and archaeologists have argued that the spread of the Typical Comb Ceramic pottery corresponded to the expansion of Finno-Ugric languages and peoples westward (Travasinsah Symposium in 1980). More recently many researchers have argued that the Typical Comb Ceramic expansion occurred as a result of a cultural diffusion between linguistically related people and that the earliest post-glacial inhabitants of Finland were already Uralic if not Finno-Ugric-speakers (Nunez 1987, 1989, 1999, Niskanen 1994, Salo 1996, Juulii 1996, 1997).

The most common archaeological finds in Kuusamo are quartz flakes and quartz tools, which were used even after the Stone Age. The quartz scrapers were used to work leather, wood, and bone during the Stone Age (and possibly later) (Sarvas 1986:92). The way of life did not change significantly from the prehistoric times up until the 16th century, except that more materials, such as metals, were added. The prehisto-
ric way of life continued in Kuusamo until the arrival of Finnish settlers from Savo (Sarvas 1986:41-44).

2. Bronze Age and Early Iron Age in Kuusamo

The date when the Bronze Age in northern Finland ends and when the Bronze Age begins is unclear as is the date when the Bronze Age became the Iron Age because the earliest signs of iron working are few and Bronze-Age ceramics (Säräisniemi 2) continued to be used into the Early Iron Age (Sarvus 1986:33-34). As also mentioned above, the same sites, which were used in the Stone Age, may have been used into the Iron Age.

Bronze-Age metals came to Finland from both the east and the west. However, as Huurre (1986:52) observes, “Because of eastern contacts Eastern and Northern Finland seem to have come in contact with metal earlier than Western Finland. The earliest known metal artifacts are a copper ring from Polvijärvi in Northern Karelia (Tawitsaiainen 1982) and a copper axe from Suomussalmi in Kainuu” (Huurre 1982). Both artefacts are dated to about the third millennium BC. Säräisniemi 2 ceramics dates to the early metal period (1300 BC-300 AD) and is found along the Oulujärvi lake system, particularly in Kainuu and Suomussalmi (Huurre 1983). Only one Särä site is known in Kuusamo so far, perhaps because the Kuusamo area is little studied (Sarvas 1986).

Reindeer domestication in Finland probably started in the early metal period. In Kuusamo reindeer were probably captured and used as decoys. At the end of the early metal period, reindeer were used as draught animals. None of the Saami had large herds. Wild reindeer were used for meat (Sarvas 1986:108).

The continuous occupation of dwelling sites, the continuation of the use of Bronze-Age ceramics into the Iron Age, and the continuation of the way of life seen in Kuusamo all point to an apparent settlement community from prehistoric times to when the Savo colonists arrived in the 1600s (Sarvas 1986:110).

3. Saami Iron Age of Kuusamo

Christian Carpelan (1974, 1975) has adopted the term Saami Iron Age (saamalainen rantautaus) for the period between 300 AD-1500 AD in northern Finland. He divides the Saami Iron Age into two periods, the Older Saami Iron Age from 300-1000 AD and the Younger Saami Iron Age from 1000-1600 AD. The date of 1000 AD was chosen as the transition because it corresponds with the period when Karelian (Novgorod) influence starts to become clearly noticeable in northern Finland.

Archaeological finds from the Saami Iron Age of Kuusamo offer a picture of the material culture of that period. There are four treasure hoards, two shaman graves, and many stray finds. The majority of the finds date to the younger period of the Saami Iron Age, after 1000 AD. Iron axes and spears points from the period 600-800 AD have been found in Kuusamo. Most of the axes are of a common-purpose type, except for two that were likely used in war. These are Viking period hatchets dating to around 1000 AD. There is one notable spear point of 1300 AD which fits the Novgorod-typ e. Similar ones have not been found elsewhere in Finland. In general, the archaeological discoveries from Kuusamo suggest that the Saami Iron Age lasted until the 1600s (Sarvas 1986:10-16).

The silver treasure hoards were found at Pyhältöti (coins to 1000 AD), Läämä (two pendants with chains, four neck-rings, two bracelets, and three horsehooves buckles), Tavajärvi (seven horsehooves buckles, a dome-shaped buckle, and a torque), and Mäntälähti (coins to the 1500s). Three of the hoards, Pyhältöti, Tavajärvi, and Läämä all date to between 1050-1150 AD, during the time when trading became more active in northern Finland (Sarvas 1986:136). Bows, arrows, and fishing equipment from the Saami Iron Age have not been found, but they must have existed. Perhaps organic material such as bone was used in their construction, writes Sarvas (1986:119).

The ceramic tradition of the early Middle Ages seems to have disappeared around 300 AD at the start of the Saami Iron Age. Iron and bronze technology came to Kuusamo from the east (Huurre 1986). Flint continued as an important item of trade (Sarvas 1986:107).

Saami villages were composed of family units which lived most of the year in isolation, but these groups gathered together with other families in winter at villages. Various winter villages were maintained with each other. In Kuusamo, Saami dwelling sites have been identified: Takanjoki, Iso-Kero-Muurniemi, Kirjastö-Tecniini, Yli-Kuoljärvi-Leipäniemi, Piekadjarvi-vi- area, Yli-Kitka-Hyväinen, Eksymäjärvi-Huri- niemi, Penikajoki-Kenttäaho, and Puusvaaren. Five Saami sites from the other side of the Finnish-Russian border are known: Tavajärvi-Autosaari, Paaanajärvi-Kauppila, Paaanajärvi-Nissaniemi, Eno- järvi-Alatalo, and Kuonnijarvi-Saunasmali. Saami sites are recorded in tradition and found in numerous locations throughout Finland. The only one so far to have been excavated is at Juukennä in Sodankylä, where settlement continuity was supported by the dating of the site to from the early metal period to the end of the Saami Iron Age (Sarvas 1986:146).

According to the burial tradition of the Saami, if a person had died during the winter, there was a temporary burial at the winter village and the body moved by sledge as soon as possible to a permanent burial at the family’s dwelling site (Tirnus 1955:17 as referenced in Ervasti 1978). Islands were the typical burial grounds of the Saami. (Note: the prehistoric Lapps also followed this practice in the Ságov region). These same burial practices may have been used in Kuusamo also during prehistory (Ervasti 1978:30, Sarvas 1986:147-148). The numerous Saami graves and cemeteries from Kuusamo date to the Late Saami Iron Age (Ervasti 1978:30, Sarvas 1986:19, 109). Lapp cairns (lapinrauniot) are known at 14 different locations in Kuusamo. Not all of these are burial cairns, but there has been any systematic research of the cairns in Kuusamo (Sarvas 1986:167).

Orthodox monasteries from the east were the first to conduct missionary activity in the Kuusamo area. Catholic priests arrived from the west from 1000-1100 AD. Pagan practices and beliefs were still strong among the Saami into the 1600s, including the use of Saami drums, which were seized by the Catholic priests and destroyed. The Saami pagan rituals were still observed secretly (Sarvas 1986:150-162).

Scandinavian sagas of the period from 1000-1100 AD report that northern Finland was traveled by Norwegians, Swedes, Karelians, and western Finns (Ivsteni) (Sarvas 1986:173). Archaeological evidence indicates that Karelian traders traveled through Kuusamo at least since the 1100s (Europaeus 1914).

Makarov (1993) sites 140 Russian or eastern Fino-Ugric early medieval artifacts found in the Saami areas of Fennoscandia, including Finnish Lapland and Northern Ostrobotnia, in addition to the Norwegian and Swedish Saami territories. From this evidence, it can be seen that there were exchanges across the region during the 12th and 13th centuries, which Makarov attributes to the traditions that linked the Saami of Fennoscandia with the Fino-Ugrics of Eastern Europe. Makarov also writes that the fur resources of the Saami territory were of critical economic importance to Novgorod in this period. As in earlier times, the trade was conducted via the access routes from the White Sea, Lake Onega, and Lake Ladoga to the Gulf of Bothnia (Vilkuna 1961, Julku 1987, Huurre, 1988).

There is no doubt that for the purpose of their tributary or trade visits to the extreme north, the newcomers would have used the traditional system of communications that connected the Fino-Ugric tribes of eastern Europe with the Lapps of Fennoscandia (Makarov 1993:340). Thus trade, communication, and even traditions passed relatively freely across the northern border of Finland during the early medieval period.

4. The Saami Way of Life in Kuusamo

An understanding of the Saami way of life in Kuusamo during the Middle Ages sheds much light on the prehistoric subsistence, beliefs, and material culture of their ancestors. In particular, the study of the Saami way of life at that time offers a means to understand the indigenous, pre-agricultural, semi-nomadic lifestyle. Much of the information about the Saami way of life in Kuusamo comes from Seppo Ervasti’s Kusamo historia I (1978).

Kuusamo had two Saami winter village societies (sitit), one at Maesla and another at Kitka. The
central site of the Saami society was the winter village, where the Saami lived during the darkest and coldest months (December-February). Near the Kitka winter village, north of Yli-Kitkajärvi lake, several cairns have been found. One of these is thought to be the fireplace of a Saami winter dwelling. Maaseikka’s last winter village was possibly located on the northern shore of Kuusamojärvi lake. The winter villages were situated in locations through which the wild reindeer migrated. The Saami who lived in Kuusamo in the 16th century were semi-nomadic, hunting, fishing, and gathering people who settled in winter villages, moving in the summertime to fishing and hunting areas according to the resources. During the summer (12.6-29.7.), the Saami fished the lakes. Their domestic reindeer were allowed to live in forests on large islands where it was easier to keep them under control. Many islands got their names that way. They had very few domestic reindeer and used these as decoy animals in wild reindeer hunting. Wild birds were also hunted. On about 25.7., the seasonal hunt of wild reindeer was performed within extended family units, who kept the meat for their own use. On 24.8., the communal hunt of the wild reindeer was conducted. In this hunt, the meat was considered to belong to the entire village community and was shared between the families. When the farming settlements resulted in the disappearance of wild reindeer, the economic basis of the Saami culture also disappeared (Ervasti 1978:17-23).

A round up of the domestic reindeer was held in the fall to keep them from mixing with the wild ones. Female reindeer were used as decoy animals and castrated males were used as draught animals. Meat and fish were stored for winter in November. The remaining domestic reindeer were rounded up in the late autumn. Individual families drove to winter villages when there was enough snow for reindeer sledges, in about late November or early December. The communal beaver hunts were strictly restricted to prevent over-hunting (Ervasti 1978:24).

Sarvas (1986) notes that some Saami were required to pay taxes to 2 or even 3 states, for example if they lived on one side of the border and hunted reindeer on the other. Perhaps the Saami’s first contact with formal authority was the raiding by Kainuu-Fikka from southwestern and western Finland, by Norwegians from the west, and by Karelians and later Russians from the southeast and east. This raiding became annual taxation later on (Ervasti 1978:37). At the February market, taxes were collected when a priest came to visit the village. The reindeer hunt lasted about 8-10 weeks, ending at the end of April when people traveled to the spring fishing sites along the rivers. This move occurred when there was still enough snow for reindeer sledges (Ervasti 1978:25).

Saami were quite skilled at handicrafts. Wood was made into reindeer skin clothing, shoes, boots, and fur coats for their own use and for sale. The Saami traded at markets (fairs). Kuusamo’s Saami had their own fairs since the 1670s. Prior to that time, they attended the Sortnipo fair. Foreign (non-Saami, local) traders visited winter villages to trade after Christmas and during the early months of each year. The oldest traders were Karelians (or Russians, as they were known in historical records). They paid higher prices for furs than Swedish crown representative merchants from Tomio, who also visited winter villages (Ervasti 1978:25).

Saami traded reindeer skins and items made from them, fur, and dried pig for food items, salt, flour, sugar, iron artifacts, powder, lead, steel tools, hemp (for making fishnet), and homespun canvas. Trade was mainly for goods, but silver coins were also used in the exchanges. In general, trading played a rather insignificant part in the Saami livelihood. From the 1500s, people from Li and Russia intruded into the hunting reindeer and fished the lakes of Kuusamo. These incursions weakened the Saami’s subsistence base (Ervasti 1978:26, Hicks 1985:54).

Each of the two Kuusamo Saami societies was a politically autonomous unit. Decision-making was done by sobbar, a meeting of all family heads. In some siita, even wives were allowed to participate. The central function of the sobbar was to allocate rights to fishing sites. Lakes in the territory were divided between families. Related families commonly fished in the same region. Land and water were considered to belong to the siita, and the sobbar only gave permission to use them. The siita’s population size and number of families was quite invariable. The number of Saami taxed did not change much either (7-14 family heads) (Ervasti 1978:27).

In 1150 the historical period began in southwestern Finland when western Finland was incorporated into Sweden. The 1323 Pähkinäsaari Peace treaty between Sweden and Novgorod brought southeastern and northern Finland into history and established a boundary separating the (Swedish) southwest and the (Novgorodian) northeast. The historical period in Kuusamo begins when in 1595 the Taysinniá Peace Treaty reset the border. The Saami of Kuusamo were supposed to cross the new border to become Russians, leaving their land behind to become Swedish property. In reality, the Saami did not leave but were forced to pay taxes to both sides (Ervasti 1978:39).

The Kitka and Maaseikka siitas came under Novgorod rule during the early 14th century. King Gustav Vasas of Sweden (1521-1560) sought to colonize territories north of the Pähkinäsaari Treaty border, and a settlement was established in the 1540s in the Oulujärvi region. These immigrants came from Upper Savo. About this Savo expansion to Kainuu and Kuusamo, not very much is known, particularly in the border region (Huurre 1987).

Lagus (1770) notes numerous violent encounters between the Saami and the Karelians and between the Saami and the Finns, possibly as early as the 1400s. The Saami were caught between two competing powers. In 1673 Charles XI of Sweden gave Finnish farmers permission to cultivate in Lapland. Finnish farmers brought slash and burn agriculture into Kuusamo from the Savo area in the 1670s and 1680s. This swidden agriculture resulted in extensive damage to the environment, which supported the Saami hunting and gathering way of life, ultimately cutting them off from the hunting of reindeer. The Finns mixed with the local Saami people through intermarriage.

In 1767, there were only individual Saami who tried to follow the old ways. Saami village societies had entirely disintegrated (Ervasti 1978:89). The disappearance of the Saami from south Kuusamo was complete by 1720, and the two winter villages were gone by 1767 (Hicks 1985:54).

5. Conclusions

The earliest inhabitants of Kuusamo most likely came there from the south and southeast, but they interacted early on with their neighbors to the north, the descendants of the Komsa people who came to Finland via Norwegian territory. Both groups were culturally and linguistically Saami by the early metal period. The Lapps living south of this region may have been a transitional group between the Saami and the Finns; certainly the linguistic evidence could support such a view. Continuous settlement and very little change characterize the prehistoric period until the 1600s in Kuusamo. The indigenous people were hunters, fishers, and gatherers who used mainly quartz and slate tools in hunting reindeer, later switching to bows and arrows. This medieval lifestyle as it has been depicted by Ervasti (1978) involved seasonal migrations of Saami families in winter villages for three months of the year and then to family dwelling sites for the rest of the year. The arrival of slash and burn agriculture to Kuusamo in 1595 changed the environment in the extent that the Saami were no longer able to practice the hunting of wild reindeer, and this change meant the eventual collapse of the Saami cultural system that had been in place for centuries. The Saami people were forced to adapt to the new way of life and were assimilated to the Finnish population.

VI. A historical look at Kuusamo and the northern Finnish-Russian boundary

Introduction

Lewis and Kären (1997) in The Myth of Continents point out the fallacy of what they term the 'jigsaw-puzzle view of the world' in which one expects that 'a proper map will always show a set of sharply bounded units that fit together with no overlap and no unclaimed territory'. In their chapter on the spatial constructs of East and West, the border between Finland and Russia corresponds to the division marking East from West in three of their seven different versions. These maps are meant to depict the perception of the category of West has been conceived at various times in history. The three maps where the Finland-Russia border and the East-West division correspond are: 1) the West of medieval Christendom; 2) the Cold War West, and 3) the greater ‘cultural West’. How accurate is it to say that the boundary of northern Finland and Russia represents a great cultural barrier? This article is intended to piece together the northern Finnish-Russian border area history with emphasis on the Kuusamo region.
Early boundaries

Certain Finnish words have Slavic origins indicating that Christianity first came into Finland from the East. However, the western form of Christianity soon became predominant, affecting, for example, the burial customs. Heathen burial grounds were abandoned, an east-west orientation was adopted, and cross necklaces became common burial items. Eventually, ancient pagan burial grounds were abandoned and Christian cemeteries came about. Symbolically, Christian churches were even built in the center of pagan burial grounds. In southwestern Finland, the shift in burial traditions took place in approximately 1150 and in Karelia around 1300 (Jukkala & Pirinen 1996).

Swedish rule in Finland, combined with the influence of Catholicism, date to the 13th century. From that time, Sweden and Novgorod began to compete over control of Finland, culminating in the Swedish-Finnish boundary. From that time, Sweden and Novgorod competed over control of Finland, culminating in the Treaty of Päijännes (1396). The agreement was renewed again at the boundary review in 1513 at Noisniemi (Julku 1987:443-444). In 1526 a delegation was sent to Russia by King Gustav Vasa of Sweden to discuss where the border should go. The proposed boundary was nearly the same as that of Päijännes up to Torsåjärvi, then through Karvunjärvi, Uusi-Pursu, and finally to Lake Päijänne.

The 1537 renewed peace treaty included a provision that the boundary again be reviewed after 10 years. In the 1540s, King Gustav Vasa sent bailiffs from Ostrobothnia to survey the northern boundary. The proposed boundary from this survey extended northeast from Kajavansalmi in Kuusamo to the fjord of Orajavo in the Arctic Ocean. The question of the border became a topic for dispute in 1555, when a Russian border party arrived at Ristamäki in Kuusamo. The Russian border party was successfully pushed back by Sweden and a peace signing took place in 1557. The boundary issue would continue to be in question, however. The 25-Year War broke out in 1571, and one of the central goals for King John III of Sweden was gaining control of the trade routes all the way to the White Sea, a goal that he failed to attain (Julku 1987).

The Treaty of Tågssjö

The 16th century boundary between agriculture to the south and Saami to the north was just south of the Kuusamo municipality border. The semi-nomadic Saami of Kuusamo had communal winter villages and spent the rest of the year fishing and hunting at individual family sites along the lakes and rivers. They mainly hunted wild reindeer. After slash and burn rye farming was introduced in the 1670s and 1680s, the Saami people were assimilated into the Finnish population. Fishing, hunting, and reindeer herding were done on a smaller scale than previously.

Sweden and Russia reset the border in 1595, bringing northern Finland and Kuusamo into the historical period. The previous agreement, the Treaty of Päijännesaari between Sweden and Novgorod, had been in effect for 272 years, although Finnish historians (Julku 1987) are still debating its exact course. Any previous agreements between the two powers over the border have not been written but most likely existed orally (Julku 1987). The Saami living at Måsalla, Kitišjärvi, and Kuoalijarvi were supposed to move to the Russian side of the border in 1596, however nothing came of this plan (Rydberg & Hallendorff 1903, Ervasti 1978, Julku 1990). Around this time, there was a boundary controversy involving the Saami village of Lake Kitkajärvi. According to Julku, this argument took place after the boundary had been set as far as Kivärvanniemi on Lake Kitkajärvi. Julku (1987) gives the following observations about the situation: "The answer lies in the nature of the boundaries of the old Lapp villages. Finnish settlers had already crossed the ancient boundaries of the territories used by the Lapps in the Kuusamo area both from the west and by Karelian settlers from the east. The boundary arrangements here were evidently extremely complicated from the outset, with the Finnish people constantly encroaching upon the Lapps, partly absorbing them and partly destroying their villages. The final blow to Lappish settlement in the area would seem to have been the serious years of famine in the 1690s. As a result of all these factors the boundary gradually settled at the position in which it was confirmed in the 19th century demarcations" (Julku 1987:447). The Peace of Stolbova of 1617 ceded to Sweden the Kikisalmi province and Ingria. Although the people living in Kikisalmi and Ingria were Karelians and thus were culturally like the Finnish people, the Orthodox religion observed by these Karelians was a political question under the Swedish rule: "In Sweden-Finland, where only a short time earlier a ban had been issued (requiring) joining the Roman Catholic Church which carried a penalty of death, the absorption to tens of thousands of new subjects whose former ruler by ties of loyalty and allegiance through the Church." (Jukkala & Pirinen 1996:153). The Lutheran faith was enforced in the conquered regions, motivating devout Orthodox believers to move to the Russian side of the border. In 1721, Sweden ceded its Russian Livonia, Estonia, Ingria, and southern Finland according to a new peace treaty.

Kontesalmi (1798) describes the livelihoods in Kuusamo between 1670 and 1797. These were primarily farming (both on settled farms and as swidden agriculture), fishing, forestry, reindeer and cattle herding. In 1686, there was 25 Finnish settlers and six taxable Saami living at the Kitišajärvi winter village; and at Måsalla 40 settlers and eight taxable Saami (Julku 1990:124).

During the 1720s and 1730s, the practice of agriculture in Kuusamo was intensified. The taxable population in 1676 was 25, and in 1760 the population was already 1571 (Hicks 1985:61, 81). Large-scale reindeer husbandry was first practiced at Kuusamo in the 1740s-1750s. Reindeer herders from the northwest came to Kuusamo in the 1760s-1770s to teach the locals. Domestic reindeer began to be used for meat, which became a trade item for exchange to the White Sea area. Domestic reindeer were also used for transportation as well as for milk products. Grain was mostly imported from the east. The population was part Finnish and part Saami by the end of the 19th century.

In 1740 the officials could make no sense of the border through Kuusamo, but in 1741 there were people who appeared to testify to the officials where the boundary should go. The court was thus able to sort out the border as far as the Kita winter village, leaving the eastern border there on uncertain foundations (Julku 1990:115-117).

Beginning in 1760, Finnish horseback riders were used to guard the Kuusamo border (Julku 1990:132). During the period from 1750-1830, in Kuusamo the slash-and-burn cultivation continued (rye and turves), while the use of permanent fields (barley and some hemp) was on the rise. In addition, reindeer, cattle, and sheep were herded. Forestry grew in importance, as lichen was harvested from the spruce trees and pine bark was collected. By 1830, the population rose to 3728 (Hicks 1985:61, 81).
The Grand Duchy Period

After the 1809 War of Finland, Finland became a Grand Duchy of Russia. "The Peace of Hamina," concluded on September 17, 1809, established the present-day border between Finland and Sweden along the Tornio River and ceded the Åland Islands to Russia. Viipuri province, which Sweden had already lost to Russia in 1743, was returned to Finland in 1812 (Häkki 1992:10). Trade, exchanges, and even migrations across the area continued much the same as before. As noted by Paasi: "Migration to Russia expanded markedly after Finland became a part of Russia in 1809, and as many as 1,000 inhabitants a year migrated there. During the period 1852-1858 as many as 100,000 Finns visited Russia, which was a considerable number since the whole population of the country had only just passed 1.5 million during the 1840s. Cultural co-operation between Finland and Russia was also strong during the Grand Duchy period, and the Russian authorities made an active effort to integrate the Finnish intelligentsia" (Paasi 1996:168).

Further debates regarding the position of Finland's border were held in the 1820s since Sweden had lost the war, but were unresolved. Surveyors in 1826 observed that the Finnish Kuusamo villages would have been on the Russian side, and there was a border survey in 1829-1830 to try to resolve the problem. The negotiations in the 1840s resulted in approximately 530 square kilometers being taken by Finland since these lands were being used by Finns and had been settled by Finns. The Karelian province of Paanajärvi was moved to Vartiokylä east of Lake Päijänne (Julkku 1990:149).

The Grand Duchy period saw Finland receiving numerous governmental and public institutions. Among them, postal and banking systems, a public construction department, and medical services. Deference was observed toward the authority of the Russian Empire in the beginning of the 19th century, but after the Crimean War in the late 1850s, a national awakening began to stir. The publication of the Finnish national epic poem, Kalevala, in 1835, was one of the seeds of this Finnish nationalism (Häkki 1992:11).

The growing population in Kuusamo depended largely on agricultural and animal products during the period from 1820 to 1950. Farms were mostly permanent barley fields, supplemented with rye, potatoes, onions, and hemp. An increased emphasis on animal husbandry meant that varying fodder resources were utilized, from natural meadows, to lichens and leaves (Hicks 1985:61).

In 1849, the boundary was again changed, though trade and relations remained stable. Russification in the late 19th century and early 20th century took place in the Baltic states, particularly in Estonia and Finland. Whereas Poland lost its autonomy following the 1863 rebellion, writes Alenius (in press), 'At the same time Finnish autonomy remained untouched (for the most part until 1899). On the contrary, it can be said that Finnish autonomy was, in fact, strengthened from 1863 onwards.' Alenius attributes this differential treatment to the fact that the Finns had been loyal to the Russian Empire, whereas in Poland the rebellion needed addressing. In Estonia, too, the citizens honored the Russian nationalism up until the 1880s. After 1899, the changes implemented in Finland as part of Russification included the introduction of Russian language at school, and other administrative affairs. It was about this time that Finnish became the official language in the Grand Duchy, another important element in the rise of Finnish nationalism.

At the end of the 19th century, writes Alenius (in press), "Finland was to a very wide extent an autonomous part of the Empire with its own fundamental laws and government. Cultural as well as economic life was much more developed than in the rest of the Empire on an average. All in all, Finland and Russia were so alike in every measure that it looks as though cultural russification seemed unrealistic even by the Russian holders of power, at least in near future, and was not launched before 1917." Thus the cultural similarities between Russia and Finland were a link across the border. Even so, there was a clear resistance to the idea of russification when it began in Finland. Some 523,000 people signed a Great Address to Nicholas II appealing him to reconsider the legislation merging requiring Finnish conscription in the Russian military. Besides the signing of the Great Addresses, protest took place in the form of "a boycott of excorcism for military service, which nearly half of the young men took part in" (Alenius). Eugen Schaman's assassination of the governor-general Nicholas Bohrjok on June 16, 1904, punctuated these resistance efforts, demonstrating the Finnish desire for independence.

"The ideology that depicts Russia and the Soviet Union as the Other has a long tradition in Finland, originating from the period when Finland was a part of Sweden and in practice a battlefield between Sweden and Russia. When Finland was a part of Russia and the period of active Russification began at the beginning of the twentieth century, it was again believed that the old Russian culture was a threat to Western civilization" (Paasi 1996:196).

The War of Independence

The Russian revolution precipitated Finland's War of Independence, for the conflict was on many levels. Otherwise known as a civil war (between Russian-loyal Reds and anti-communist Whites) and a class war, the War of Independence was launched on January 28, 1918, against Russian troops in southern Ostrobotnia. The Reds surrendered by May 16, 1919. In July 1919, the independent Finnish government was installed. A peace treaty signed on October 14, 1920, affirmed Finland's independence and ceded to Finland the territory of Petsamo on the Arctic coast.

In the years preceding World War II, the Finnish nationalist tendencies were intensified, with an increasingly propagandistic view of Russia as the enemy: "Between 1920 and 1939, the representa­tions of the Finnish-Russian/Soviet boundary in Finland were laden with religious metaphors aimed at convincing people that it was the historical duty of the Finns to stand against evil and the East" (Paasi 1996:195). In May 1922, 11,000 guerrilla fighters and Karelians were withdrawn to the Finnish side of the border at Kuusamo and Suomussalmi (Evrasti 1978:673). The Karelian refugees living at Kuusamo were provided an orthodox priest, and their children were educated at the Kuusamo folk school. As Karelians, they were accepted and incorporated into the Finnish society, being perhaps considered more Finnish than Russian.

World War II

The Soviet invasion of Finland on November 30, 1939, was the beginning of a very difficult experience for the people of Finland. Apparently, Stalin believed that it would be easy to conquer Finland: "Krushchev's posthumous memoirs suggest, on the one hand, that neither Stalin nor Marshal Voroshilov, the People's Commissar for Defence, fully apprised the under-preparedness of the Red Army; and on the other that, when the attack on Finland was finally launched on 30 November 1939, Staff did not expect to meet serious resistance. 'All we had to do was raise our voice a little bit, and the Finns would obey.'" As Stalin said, we could fire one shot and the Finns would put up their hands and surrender. Or so we thought." (Kruschev 1971:152, 159-160, as quoted in Salmin 1997).

During the Winter War, deaths on the Finnish side were 21,396, with 43,557 soldiers wounded and 1,434 missing. Some 420,000 Karelian refugees were relocated in Finland. "The feeling of patriotism among Finnish workers was strengthened, and the war solidified their ideological hostility to communism" (Häkki 1992:25). "In the autumn of 1941 territorial expansion, in the guise of 'secure frontiers' or Lebensraum came to be accepted as a war aim by all the political parties, while Finnish propaganda misleadingly claimed a 'Nordic' racial character for the Finns" (Boog et al. 1983:852-855).

Kuusamo's border company was part of Lapland's border guard during the Winter War. The enemy attacked across the border on December 2, 1939, in the Pajanaarvi region of Kuusamo. "Outposts had to be withdrawn to avoid being surrounded, and observation patrols were sent across the border. Most of the Kuusamo men who were called to serve fought in the four companies of the ErP16, a battalion composed of reservists and guardsmen. After the Winter War, the entire Kuusamo County was evacuated. Its eastern areas (the villages of Pajanaarvi and Tavajärvi, and the Kenttijärvi area of Länsi region) were given to the Soviet Union in the armistice. The other Kuusamo inhabitants were able to return to their homes in the spring of 1940. Some border villages were burned by the Russians during the Winter War (Evrasti 1978:740-744). The peace treaty on March 13, 1940, concluded the Winter War.

Germany occupied Denmark and Norway in March 1940. The Germans also occupied the Petsamo nickel mine in northern Finland. On September 12, 1940, Germans and Finns made an agreement authorising German troops to travel between Finland and Northern Norway. At Kuusamo, defense lines were set up in the autumn of 1940. The Germans together with Finnish troops were to build a railroad line to Murmansk, which at Kuusamo was by 1940 an attack from Kuusamo-Salla toward Kuusamo.
lahti. The first German troops, arriving in early June 1941, were met with a friendly reception at Kuusamo because the local people were afraid of Soviet invasion. The Germans were unfamiliar with the terrain and did not perform well in forest fighting. The Continuation War began on June 25, 1941, when Finland joined Germany’s invasion of the Soviet Union, recapturing the territory lost to the Soviet Union during the Winter War and occupying some Eastern Karelia territory. The railroad was built by the Germans with Russian prisoners of war between 1942-1944. The Kuusamo region experienced a great deal of partisan activity. And as a result, civilian murders and kidnapping occurred across the border. A treaty ending the hostilities between the Soviet Union and Finland was signed on September 19, 1944. When the war with the Soviets ended in the autumn of 1944, the Kuusamo civilians were once again evacuated. Upon returning to Kuusamo in the spring of 1945, inhabitants found that all the buildings had been destroyed by German troops and over 400 Kuusamo men had died (Ervasi 1978:744-764). Finnish Lapland was free of Germans by December 1944. In years following the war, land mines and hand grenades have been found from time to time, even by children. During our Finnish-Russian Border project, we encountered a number of the WWII trenches and other related relics left scattered across the Kuusamo countryside.

Conclusion

The agricultural situation in Kuusamo, as in other parts of Finland, has worsened in recent years, and this has meant the demise of many small farms. Richard Gould’s (1987) study of Liikasenvaara community documents the abandonment of farms. In 1967, there were 26 cultivation farms and ten dairy farms (4-5 cows each), in 1977, the number had dropped to only eight farms with cultivation, three of them dairy farms and one a beef cattle enterprise. Since 1950, Kuusamo’s emphasis has shifted to cattle operations, although some barley has been cultivated and reindeer herding continues. The population reached a maximum of 20,913 in 1968 (Hicks 1985:61, 81). The present-day Kuusamo region is located within the Finnish reindeer herding district, but south of the Finnish Lapland boundary. Tourism and recreation industries are important to the economy today.

In recent years the border has become more open. Karelians visiting Russia have found that their home cities are quite different. Many churches and buildings have been razed, and outdoor markets are no longer located at the same sites. However, in many cases, contacts with relatives who were left behind in the closing of the border have been renewed, reaffirming the cross-boundary connections of the people in northern Finland.

VII. Project History

In recent years there has been a calling for more reflexivity in archaeology as a discipline. Ian Hodder, one of the main proponents for such an approach, is engaged in a long-term project to excavate Catal Hoyuk, a large and important Neolithic site in Turkey. In addition to the scientific research agendas of the project, Hodder is engaged in studying sources of subjectivity in archaeology; starting with the basics of data collection through the final publication of the data and the interpretations made by the archaeologist. One of the catch phrases often associated with the project is “interpretation at the trowel’s edge.” This is the suggestion that no aspect of an archaeological investigation is free from some form of subjective interpretation with every person on site inherently contributing to the interpretive process while making decisions starting with the basic routines of data collection. We can only applaud such a stance and hope that the data produced will shed light on the roles that all play in the archaeological process. However, we also suggest that there are many other important sources of subjectivity which impact the archaeological process before the trowel’s edge first makes contact with the earth and during the field season and post-excision processes. It is the aim of this section to discuss these and the implications that they have for the collection of data, any interpretation, and the general direction of archaeological research.

Archaeologists (we assume that this is true for most disciplines) do not exist in a perfectly free environment where pure intellectual interest dictates the course of research. We are subject to a myriad of influences, all of which impact our research and how we do it. It is almost certain that the final product of an investigation will be the result of a carefully constructed research agenda. However, countless informal decisions, on the spot compromises, reactions to unforeseeable situations, and the overall dynamics of social interaction have large roles in determining the outcome and the processes used. In this section we will discuss some of the factors that impact the basic process of archaeological investigation, from the conceptual genesis of the project through its final interpretation and publication. In doing so we will look at some of the more institutional factors that impact the discipline, the social dynamics which occurred during the process of the field work and the impacts these factors have on archaeological research, and the ways in which any and all interpretations and decisions are shaped by cultural interactions and the cultural context in which they occur. This section is an attempt to provide a cultural context in which we can reflect on our practice and the ways in which it shapes our understanding of the past.

The whole project came into being in the Anthropology GIS Laboratory at the State University of New York at Buffalo. Dr. Ezra Zubrow, the director of the lab, was hosting Dr. Milton Nunez (an old friend of his) when the two decided that they would like to collaborate together. They were interested in the unique advantages and disadvantages which accompany cross-cultural collaboration. To facilitate this as well as to document the project, we will provide a complete history of the project, including our intentions and rationales, from the very beginning to the present stages.

The project was sent out to the National Science Foundation for review, contingent plans were made in the case of acceptance, and, for the most part, everyone returned to their normal lives as the Finland project was turned to their normal lives as the Finland project. From the Finnish standpoint, the Finland project failed us and the “clear cut region” that was so highly significant location historically (and in modern times) and would be an interesting and dynamic place to work. Several subsequent seasons of the area from previous visits, with its beautiful and rugged natural landscape, and considered it an excellent area in which to spend a month researching. Finally, we felt that the clear cut areas in the Frontier Zone would provide an excellent natural environment with a good view of the ground surface. It is interesting to note that our memories had completely failed us and the “clear cut region” that was so crucial to the selection of the area and the construction of the methodology for survey did not really exist! The areas which we had visited previously had been harvested by the forestry industry and we had mistakenly extrapolated this to the entire Frontier Zone and the swath of land which was cleared surrounding the actual border was only about ten meters wider rather than the five hundred which we had initially thought.

Over the next several days, seven of us worked on writing sections of the proposal and making comments and suggestions and by the time that Milton had left there was a final draft in hand. The proposal was sent out to the National Science Foundation for review, contingent plans were made in the case of acceptance, and, for the most part, everyone returned to their normal lives as the Finland project slipped to the back of everyone’s minds. This all changed months later when we got a call from the NSF telling us that the proposal had been accepted for funding. This meant that immediate concrete plans had to be drawn up covering all of the logistics of the project; ranging from the best season to be in sub-arctic Finland, to the specifics of domestic arrangements. As it worked out, the Finnish side assumed responsibility for all domestic arrangements within Finland (accommodation, transporta-
personnel organized, we made our way towards our base camp at the Kuusamo Kansanpisto in Kuusa- mo. This location was the alternative which was decided when we learned that we would not be able to make use of the Uolaika Biological Station due to the large number of researchers and the time frame chosen. The Kuusamo Kansanpisto school was well suited in terms of facilities, with more than adequate living facilities, office space for the project, rooms for meetings, and a computer lab which we had full access to for the duration of our time there. In addition, its location in the town, as opposed to the rather isolated location of the research station, offered a variety of bonuses including access to stores, restaurants, bars, and even a night club!

As stated in the introduction, we had neither personal experience working in the specific area or any precedent to base our approach upon. We were the first archaeological team to ever operate in this area and therefore during the first week in the field, a great deal of flexibility had to be shown in the restructuring of methodologies and approaches so that we would be able to contend with the unique aspects of the environment in which we were working. Almost immediately we realized that it was not possible to survey as far in the northern direction as we would have liked because of a lack of access routes and because the mobile phones which we relied upon for communication could not operate in the north. So the ‘North Team’ became the ‘Deep South’ team and was sent far to the south where they would march north until meeting with the ‘South Team’ (see Methodology Section for explanation).

This posed another problem because we had received permission from the Finnish Border Guards to operate in the Frontier Zone in Kuusamo county and in the county directly north, but not in the county to the south of Kuusamo. It was decided, because of this, the difficulty of operating in the border region, and to insure that both sides of the project had some agency in conducting the type of research that they were interested in, that once the 100 km of Frontier Zone within Kuusamo had been systematically sur-veyed, the Finnish side would then use the remaining time and resources to conduct an intensive based survey in the Kuusamo region, with an emphasis on locating sites near lake shore zones.

During the final week in the field, several members from the American side stayed at the base camp to begin packing up all of the data and equipment, analyzing the data collected, and starting on the project write-ups. Dr. Milton Nunez and two of the students from Oxford went to a Nordic Archaeological Conference in Sweden during this time where they presented a paper of our work in progress. Finally, the entire crew moved back to Oulu where everyone headed out to their destinations.

VIII. Cross cultural interaction

The Finnish-Russian Border Survey Project invol­ved participants from Finland, the United States, Canada, Germany, and England. All of the team members brought with them a wide range of personal­ities, experiences, opinions, ideas, agendas, and methods from their own cultural, professional, and academic backgrounds. To exploit the wide spectrum of human resources available in a way that maximized efficiency and success and at the same time included and respected the interests of all parties proved to be a complicated, interesting, and sometimes frustrating experience for all involved. A brief exploration of this experience is important for several reasons. First, the dynamics of cross-cultural interaction are a worthy subject on their own. Also, the dynamics and all of the adjustments made to accommodate them had a strong impact upon all aspects of the research design and application. There are many ways in which cultural differences manifest themselves in the project, ranging from very broad issues of basic research philosophy to specific issues such as the amount of days working in the field. Here we will briefly look into the culturally different approaches to leadership, management, survey technique, and social interaction. This is not meant to be a comprehensive study of Finnish or American culture, nor do these observations typify the ‘norm’, in whatever capacity that exists. Also it should be kept in mind that this report is written in English, and this particular section was drafted primarily by Americans. These factors are significant to the presentation of Finnish and American culture; it is however meant to be reflective, thereby reducing or diluting bias.

The project leadership structure included two project directors, two assistant directors, and six senior staff members. Each of these positions was evenly divided between Finns and Americans, such that any assignment was 50% Finn and 50% American. However, due to the leadership techniques innately envisioned by either group, this proved more difficult than expected. American archaeologists inherited from its earliest researchers a ‘military’ design (Willey & Sabloff 1993), such that a ‘chain of command’ might best typify the formal interaction between director and staff. This system (arguably) detaches personal friendship and relationships from administrative decisions. Though we should stress this residue from early Euro-American archaeological training is dampened by modern views of equality and individual rights, such that the management style of the Americans on this project was a ‘far cry from military boot-camp’. That said, the Finns were even less formalized in this sense, and relied on a keen understanding of one another, such that some initiatives would be instated, to a subtly implied. Thus as the Americans were making directive lists and talking about every detail of procedure and schedule, the Finns were able to communicate much of this without a word. Unfortunately, this was misunderstood on numerous occasions as Finns would expect something to be a logical or necessary action, and it would be entirely missed by an American. Americans felt as if the Finns were not interested in planning and strategy, thus unequal precedence might have been given to certain decisions which were boldly expressed by Americans. In both cases, it was not an inadequacy which was the root of inefficiency, rather it was a difficulty in cultural communication and sensitivity. Both the Americans and the Finns had worked together before and were critically aware of this issue, though old habits change slowly. Fortunately the team was very professional, and could address issues such as communication self-reflexively, in hope of a smoother running leadership structure. In this respect both Finns and Americans saw ‘eyes-to-eye’.

In addition to cross cultural confusion in the staffroom, there were significant differences in the field. First it should be noted that all of the Finns on the project were highly experienced woodsmen and woodswomen. Though most of the American archaeolo-gists were also adept in the forest, none had the intimate awareness of the Finnish landscape demonstrated by the Finns. This made for very different behavior, interaction, and interpretation in the field. For example, the survey methodology called for various record forms to be completed upon encountering various archaeological contexts. The-
systematics of archaeological fieldwork. Cross-cultural projects can sometimes generate issues of misunderstanding and communication breakdown, why engaging in such endeavors? The answers are numerous, but the single most important reason rests on the idea that archaeology is multi-vocal. There is more than one interpretation of prehistoric evidence, and these interpretations are contingent upon the methods and approaches to archaeology is inexhaustive. We presented in terms of management and field operation. So if cross-cultural projects generate misunderstanding and communication breakdown, why engage in such endeavors? The answers are numerous, but the single most important reason rests on the idea that archaeology is multi-vocal. There is more than one interpretation of prehistoric evidence, and these interpretations are contingent upon the methods and systems of archaeological fieldwork. Cross-cultural projects can sometimes generate issues of miscommunication, however they also facilitate international exchanges of knowledge and experience.

IX. Methodology

Project design

In order to meet all archaeological, environmental and theoretical objectives of the project, a methodology was adopted that called for the systematic survey of both a sufficient amount of the Finnish-Russian border zone as well as the Oulanka River valley. Due to the hypothesized lower density of sites within the border zone it was determined that twice the area should be surveyed in that region to facilitate a safe interregional comparison of the data. The number of personnel available to the project allowed for the organization of three survey teams each composed of seven surveyors. Due to the difficult nature of the terrain in the border zone as well as the desire to cover more ground in that area one team was committed to the river valley while two were committed to the border zone. All teams started surveying at the same start point, the intersection of the Oulanka River with the Finnish-Russian border zone.

In the original design, one team was to move west along the north bank of the Oulanka River, while the other two teams surveyed due north and south along the reindeer fence. The reindeer fence is a 3 meter high metal fence that runs parallel to the Finnish-Russian border, deep within the border zone and often in sight of the border itself. While obviously intended to keep Finnish owned reindeer from straggling over to the Russian side of the border it performed the same duty for project surveyors who might easily have made the same mistake in the sometimes dense brush.

Within each team, surveyors were spread apart at 20 m intervals. This was the maximum distance allowable in most cases due to ground cover and visibility. The teams were anchored and guided on each end by two project team leaders who were responsible for directing the team and collecting data in the field. While each team consisted of seven surveyors, it is important to note that rarely were all seven surveyors in the field at the same time. Driving responsibilities and attrition due to sickness and injury kept on average, one person from each team daily.

Logistics and limitations

Logistical problems and limitations encountered throughout the project forced a series of changes within the methodology. The first major changes concerned the prevalence of bogs within the border zone. Many of these bogs proved to be impassable as...
well as dangerous. In the first days of survey several workers became immobilized in the deceptively deep mud and required considerable help from other members of the team to get free. In the interest of the safety and welfare of the surveyors bogs were treated in the same manner archaeologically as one would treat a lake. They were either circumnavigated or passed through by walking on the planks that the border guard maintains and uses to patrol the border. It was recognized that treating the bogs as lakes severely diminished the area that would be covered by survey within the border zone, thus diminishing the relevant data collected within the border zone and thus making any interregional comparison of the data more difficult. In order to alleviate this potential problem it was decided that survey within the border zone would be moved from the area along the reindeer fence in the easternmost part of the zone, to the area along the western boundary of the border zone. Although this area had approximately the same number of bogs, it was much easier to survey because plank bridges had been laid over and through many of the bogs. It also reduced the amount of distance that had to be covered for access.

Another change in the methodology was forced by the lack of access roads into and out of the border zone. This was especially true in the area to the north of the start point where roads were few and far between. Because there was simply no way to drop a team off or pick a team up, this area of the transect had to be abandoned and the team originally slated to move north from the start point was moved far to the south where road access was available. Subsequent to this move, the team surveyed in a northward direction until linking up with the team moving south from the start point. This change allowed for the maintenance of a continuous transect within the border zone while alleviating the road access problem.

Along with these logistic difficulties, surveyors were also presented with several limitations associated with working in the politically sensitive area of the border zone and the ecologically sensitive area of the Oulanka Park. Within the border zone field workers had to be extremely careful not to take any video or still photos across the border and fires were prohibited within 500 meters of the border. While in the Oulanka Park area, surveyors on the river transect were governed by strict regulations regarding any subsurface investigation including digging test pits, auger samples, and removal of artifacts.

Data Collection

As stated earlier, the project was concerned with collecting two main types of data, archaeological...
and environmental. Environmental data was collected by each team for every kilometer of the transect they surveyed. Once every kilometer the team stopped and filled out a detailed environmental data form, noting elevation, flora, drainage, geologic features, hydrology, sedimentology, geomorphology, raw material sources and other pertinent information. Along with these forms, a hand drawn map was created clearly labeling raw material sources, rock outcrops, lakes and other information of interest. At these times, a soil sample was taken using an auger and bagged for future analysis by flotation. Photographs were taken prolifically in the field and recorded in a separate photo log. These photos provide a good visual record complementing all hand drawn maps and forms. In addition, team field journals were also kept, noting specific areas of interest and providing a written record to complement all recorded data. Hand held GPS (global positioning system) units allowed each team to space soil samples exactly 1 km apart and provided exact X, Y, Z coordinates with which to label all soil samples.

Archaeological data was also collected using a series of forms. These included site forms, structure forms and test pit forms. When a site was recognized in the field, the entire team was called to the site for the completion of a site form. These forms included a description of the site, the location of the site (both geographical and environmental) any subsurface investigation of the site, any and all material remaining present, an initial dating of the site if possible and a record of all photos taken of the site. Other information recorded on these forms concerns the ownership of the land where the site was found and information on the investigators themselves. At each site an auger sample was taken and bagged for later analysis of pollen and other paleo-ecological features. In cases where a site could not be positively identified through the material present on the surface, test pits were dug. Each test pit was approximately 25 cm by 25 cm in dimension and went as deep as the cultural layer in that particular area (usually 25-40 cm). For every test pit dug, a test pit form was completed providing exact information on the location of the pit within the site, the depth of the pit and the types of material found within the pit. Along with this information, hand drawn maps were completed recording the exact location of all test pits within the site.

Due to shifting of the Finnish Russian border throughout history, it was expected that researchers would encounter a number of abandoned pre-WW II structures within the border zone and indeed this was the case. Types of these structures included tar pits, saw mills, WW II bunkers and trenches, water mills and cabins. To record these separately from the archaeological data, a structure inventory field form was devised. The location of all such structures was determined using the GPS units and detailed information such as size, foundation type, building materials, date estimation and other architectural features were also recorded.

Besides the collection of environmental samples at 1 km intervals along the transects and at every site, relatively few materials were collected in the field. This was mainly due to the relative high importance of site identification and understanding versus subsurface investigation. Where possible, sufficient charcoal samples were taken from test pits at dwelling sites and in cooking pits to allow for future radiocarbon analyses. In some cases nails were collected from cabins and other historical structures for dating purposes. One metal scythe blade was collected for the same purpose. A small percentage of lithics and other materials were collected from the field for analysis and the positive identification of the sites from which they were derived. These were almost exclusively quartz flakes, cores and scrapers and a number of possible fire-cracked stones. Some raw materials such as a number of raw quartz nodules were also collected. In addition to these, a small amount of organic material was also collected. These included a bag of seeds and 2 reindeer jawbones.

The GPS units carried by all teams provided another means for data collection separate from the forms. Every GPS unit had the capacity to store a significant amount of geographical information and the same units were used by the same teams on a daily basis. For every environmental form completed a waypoint was taken and stored within the GPS unit. Waypoints were also recorded at every site and for every test pit. Within each GPS unit, a complete geographic log recording the progress of each team was compiled. For ease of correspondence with field maps, all GPS records were originally taken using the Finnish GPS system.

**Fig. 11.** Locations of quartzite deposits were documented as they assist researchers in understanding prehistoric utilization of raw material. — Photo: Donna Chesnut.

**Fig. 12.** Brian Decker takes a GPS reading and documents the location of a small hunting pit. — Photo: Donna Chesnut.

**Analyses**

Collecting data through a series of standardized forms facilitated the compilation of several compatible computer databases using Microsoft Access '97. All data collected in the field was added to the databases in the Kuusamon Kansanpisto on a daily basis. This allowed for data to be stored in both digital and hard copy formats. Once all data had been collected, a series of comparisons and analyses were performed before the teams even left the field. These were done using Microsoft Excel and can be seen in the results section of this report.

Other analyses were performed using the data collected from the GPS units. Using Fugawi, a program designed to be compatible with GPS units, all waypoints and other geographical data were downloaded onto the computers directly from the GPS units. This provided researchers with the ability to create some preliminary maps of site locations. From these preliminary maps, some generalizations concerning the distribution of different types of sites along the transect could be made. This data is also compatible for analyses using a series of GIS (geographic information systems) programs such as ArcView and ArcInfo.

GIS has many important applications in archaeology and future analysis of this data may include expanding the digitized area to include all areas surveyed as well as plotting the GPS coordinates to show precise movements of survey teams and the environments they covered. It is also possible to plot the locations of each environmental sample as well as archaeological sites.
X. Results

1. Site results

The expedition strategy was very successful in locating sites as well as analyzing their relationship to the environment. The various site types included both archaeological and historical structures, artifacts, and other kinds of remains. The modern landscape remains similar to the prehistoric one.

Descriptive

All the teams encountered various types of sites that correspond to different environmental situations.

The majority (70%) of the sites were located along the river, with the remaining 30% falling within the frontier (border) zone. However, the percentage of sites in the frontier zone was higher than predicted. This was particularly the case given the accessibility of the border environment. The River team surveyed 49 kilometers in the river valley, which gives an average density of 2.33 sites per kilometer. The border transect stretched unbroken for 114 kilometers, demonstrating a site density of 0.24 sites per kilometer. Essentially, the area surveyed along the river is 10 times denser in sites than that of the border area. Given the lengths of the transects, we believe these figures represent real differences in the occupation density. The frequency of various types of sites is summarized in Figure 15 and Table 1.

The landscape covered in the survey ranges from approx. 100 m to 350 m while the sites found were located at elevations ranging from 139 m to 350 m. Environmental samples were taken at 1 kilometer intervals on the transects. The data collected included information concerning the flora, fauna, sedimentology, geology, hydrology, geo-morphology, and climate. At each 1 km interval a GPS waypoint was recorded, locating the various samples. The average elevation of the 143 sample stations is 268.13 (masl).

The various environmental locations of the recorded sites are summarized in Figure 17 and Table 2. Initially, we divided the site types into high frequency site types and low frequency site types. High
frequency sites (i.e. greater than 10% of all sites) included structures, pitfalls, and hut depressions. Most sites displayed surface evidence and/or feature evidence. Low frequency sites (i.e. less than 10%) included cairns, stray finds, mounds, boundary markers, and cooking pits. A more detailed discussion of the sites is included in the preliminary analysis below.

The sites were primarily located in woodlands, on ancient terraces (river or lake), in upland areas, or along the river valley, floodplain, and/or shores. At least 25% of the sites were located in areas that showed no sign of previous cultivation. Interestingly, six sites were found in peat bogs, and 3 sites were found in clear-cut (i.e. forested) areas. Generally site locations displayed good or fair water drainage, and the slope was from gentle to moderate (range: 0 to 5%). Site material included quartz, bone, fire-cracked stone, metal, glass, and other historic material.

Preliminary Analysis

A preliminary analysis of the site information was performed. It consisted of examining various relationships between sites and locations and environmental factors, using the actual counts and two types of standardized frequencies. The first standardizes the queries by dividing the chosen site type within each criteria by the total number of all types of sites within that criteria (e.g. dividing by the total number of sites within the woodland environment). The second standardizes by dividing a chosen site type by the total of all the tested site types within a particular criteria (e.g. if pits, cairns and mounds are tested in a woodland environment, one divides the number of pits by the total number of pits, cairns, and mounds).
and mounds in woodlands, which refines the data and removes problems of scale. This is especially important for low frequency sites whose trends may be misleading without standardization.

The question of which sites occur in which environments has always been basic to studying prehistory. If one examines the distribution of high frequency sites (structures, hut depressions, pitfalls) by environment, several relationships may be discerned. All the high frequency sites follow a pattern of higher number and higher densities in highlands, (woodlands and terraces) decreasing as one approaches rivers and lake shores. This is not necessarily an index of sites to elevation because cliffs and high ridges are sometimes located a few meters from the river or lake shore. Secondarily, the environments are not mutually exclusive and thus a site may be identified with more than one environmental category.

When each type of high frequency site in a particular environment is standardized by the total number of sites in that particular environment, then in the highlands structures and hut depressions are increasingly situated near the shores and valleys while pitfalls decrease in those environments. In other words, the more recent residential sites are increasingly located near the shores as compared to the other high frequency sites. In all environments the pitfalls have an inverse relationship to structures and hut depressions.

The Low Frequency sites (cairns, mounds, cooking pits, and boundary marks) do not show the same overall trends as high frequency sites across similar environments. Boundary markers and cairns show a strikingly similar pattern to each other, which may be due to the fact that most markers are piled stones — thus classified as cairns. However other types of cairns (such as prehistoric burials) surprisingly show similar patterns of higher frequencies in the uplands. Other types of potential landmarks such as mounds are not present at all in these environments. Cooking pits are inversely related to cairns and boundary markers, and are most frequent in the rivetine environments. Figure 21 demonstrates how standardization accentuates these trends.

In addition to analyzing site types in terms of environment, the situation of the visible evidence from all types of sites (i.e. both high and low frequency) was plotted against its environmental location. The survey detected buried evidence and plow zone evidence in equivalent amounts in each environmental context. In the river valley and the shores surface evidence and feature evidence correlate, yet are inversely related in the highlands. Thus the archaeological evidence is most apparent on the surface in the river valleys, and in most cases corresponds with feature evidence. However away from the valley, surface evidence and feature evidence demonstrate an inverse relationship. After the second standardization, this relationship is intensified.

Other analysis of the sites includes their relationship to slope and soil drainage. High frequency sites such as pitfalls are most prevalent in moderately steep slopes (approx. 5 %) while structures are located in slopes ranging from flat to moderate. Hut depressions are frequent in gentle slopes 2 % and decrease as slope changes to moderate and steep (greater than 5 %).

Low frequency sites such as mounds, cairns, boundary markers, and cooking pits are generally situated on flat slopes, though cairn sites are also were detected on moderately steep slopes.

When examining the drainage characteristics of site locations, high frequency sites such as structures are more frequent in areas of good drainage, though when standardized by the total of all types of sites in the various drainage categories, structures demonstrate a considerable tolerance for environments with
poor drainage. However, pitfalls and hut depressions show a distinct avoidance to poorly drained areas, which may be a commentary on changing technology and ability to adapt to the environment over time.

Low frequency sites are generally situated in well-drained areas. However, cairns and mounds demonstrate an inverse relationship when standardized by the total of all low frequency sites in each environment, with cairns showing a higher tolerance for wetter areas. In any discussion of drainage it should be noted that the survey was more apt to locate sites in dryer environments due to logistical circumstances. Thus the standardization by the total of all sites found is essential in clarifying some of these trends. (note to methodology i.e. a fundamental methodological decision was made: namely that people do not live in lakes, or swamps, therefore, the transect went across lakes and bogs and surveyed them differentially. In other words, the surveyors crossed the bogs in a single file line and not at regular intervals. Thus was decided to be the safest because often there were plank bridges which only allowed for single passage. For lakes, the survey technique assessed up to the shoreline, and then to resume the transect at the other side or to cross by some sort of water craft.)

2. Structure results

Descriptive

Numerous structures were found as part of the survey. The distribution of structures by transect is shown in Figure 28 below. On the river transect, the structure density is 0.24 structures per kilometer which is approximately one tenth of the total site density for that transect. On the border the density of structures is 0.12 or one half of the structure density on the river. However, 0.12 is fifty percent of the...
total site density on the border. On the border one finds one site per four kilometers and one finds a structure per eight kilometers.

Initially, the survey expected to find a wide range of types of structures. These included fishing dams, tar pits, mills, kilns, churches, and war bunkers. Surprisingly, none of these were found in the transect. However, tar pits and WWII structures were located by the survey teams outside the formal transects. On the other hand, numerous unexpected types of structures were found. The frequency of these are summarized in Figure 28. The majority were cabins, barns, and houses. At least 57% of the structures were dated to the last two centuries. This dating was done by matching structure design and construction with known historical records and sources. When this information is considered in conjunction with the density data, the sites along the border exhibit a considerably more recent average date than those along the river. This is significant in consideration of the more theoretical discussion concerning the changing role of the border and the 'Oulanka river gateway' both in prehistoric and historic periods.

The foundation types of the cabins and barns are primarily (approx. 70%) of log and peat, which is key to understanding the date of these structures and their situation in the historical landscape. Specifically, twice as many foundations were made of logs and/or peat as opposed to stone. This may be indicative of the permanence or function of the structures. Our assumption is a stone foundation is used for a more permanent structure, or in cases where it is desirable that the floor be elevated from the freezing/wet ground. The indication is that the bulk of the structures were not constructed with long term preservation in mind, and served as barns, shacks, small hunting cabins, or storage structures instead of permanent farmsteads. The foundation types are summarized in Figure 30 below.

The construction types and/or condition of the structures is summarized in Figure 30. Most structures are currently in ruins or dilapidated.

Preliminary analysis

An analysis of the structures entails a long and arduous process of comparing the wooden structu-

Fig. 26. Low frequency sites by drainage (first standardized).

Fig. 27. Modern hay barn typical of the historic structures found along the border abandoned during the Russian-Finnish War.

--- Photo: Donna Chesnut.---

Fig. 28. Distribution of structures by transect.

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res which have been located, to historic photos and documentation of their function. This has changed some of our initial interpretations of structures found in the field. For example, a depression which had some burned logs and a lace-constructed foundation was interpreted as a barn base, but after further investigation is more probably a small lean-to type structure (kota) (Kortesalmi 1975:206) 75% of the structures found have an average area of less than 20 m². This would indicate that the majority of the structures are small hunting/fishing cabins, small barns, temporary storage facilities or seasonal homes. Historical photos show structures of this type being used for such purposes primarily during the 18th, 19th, and early 20th centuries. The latest possible date of abandonment for the structures located on the frontier zone corresponds to the treaty which made the border zone inaccessible to the general public: 1941.

3. Environmental results

Descriptive

We have already outlined the general environmental context of the Kuusamo region, and the overall geobotanical characteristics of the survey areas. The systematic collection of micro-environmental data has allowed us to further contribute to the environmental picture related to human interaction with the landscape in each survey region. The river transect and the border transect encountered very different environmental conditions, the geological indicators are summarized in Figure 33.

The geology and sedimentology of northern Finland is characterized by different depositional processes. Both along the border and in the river valley glacial formations have had the most impact on the topographic formations and colloidal depositions. Also common to both areas is the high level of fluvial, or water transported sediments (Fig. 35). This is indicative of the abundance of water in the survey environment and the role of changing water conditions since the last ice age. The actual soil sediments also correspond with these forms of deposition, as most of the soils are sand or gravel, which are typical of glacial and fluvial deposits (Fig. 36).

Figure 37 illustrates the petrology of the sample areas. According to Milton Nunez, the geological landscape has shown no change since the end of the Wurm and thus what we see is quite similar to what would have been seen by any prehistoric person.

As mentioned water is a key element in both the formation and sustenance of the Kuusamo environ-
The distance of a sample from water can have significant effects on the type of soil and the microbotanical information collected in the soil samples and on the general recorded conditions of the sample area.

The border is host to many more lakes, ponds, streams and brooks than by the River Team, which is clearly dominated by the river itself for fluvial and hydrological impact. This is significant when considering the border region as a 'natural' border or obstacle, whereas the river and its environs are more easily negotiated.

This can also be seen in the number of bogs which were encountered by each transect summarized in Figure 39. The border area has more than 6 times the amount of boglands per kilometer than the river valley. The environmental conditions of both the Oulanka river valley and the frontier zone remain relatively unchanged for the last 3 500 years, making the environmental results significant in terms of recreating the paleoenvironment.

Soil analysis
Methodology
Approximately 184 soil samples were taken during the archaeological survey of the Finnish-Russian border and the Oulanka river valley. These soil samples can be broken into two types. The first of the two types was the environmental sample, and this constitutes the majority of the soil. As mentioned earlier, an auger sample was retrieved every kilometer throughout the survey, although some bogs and marshes made the extraction of many difficult or impossible in some areas. This sample along with other micro-environmental data was documented in the environmental forms and used to maintain a record of the environmental information in the region. The second type of samples taken by the teams are those that represent sites. Auger samples were taken to help determine whether a suspected feature was indeed a site. These soil samples were often compared to the nearby environmental samples in order to determine cultural activity. Information was also recorded regarding the setting in which the site was located and associated artifacts.

A variety of information was gathered at the time of soil removal. This data includes the date the sample was taken, the survey team that took the sample, the auger ID number, the Finnish X, Y, Z coordinates, the depth (in centimeters), a description of the sample, and any comments deemed useful. The sample was then bagged and labeled with provenience, cataloged and finally shipped to the SUNY University at Buffalo for processing and analysis.
Number of environmental samples by type of deposition on the Oulanka River and the Border Zone

Number of environmental samples (1 kilometer spacing)

<table>
<thead>
<tr>
<th>Type of Deposition</th>
<th>River</th>
<th>Border</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deposition: Colluvial</td>
<td>1</td>
<td>34</td>
</tr>
<tr>
<td>Deposition: Alluvial</td>
<td>34</td>
<td>55</td>
</tr>
<tr>
<td>Deposition: Glacial</td>
<td>28</td>
<td>72</td>
</tr>
<tr>
<td>Deposition: Human</td>
<td>2</td>
<td>109</td>
</tr>
<tr>
<td>Deposition: Other</td>
<td>15</td>
<td>16</td>
</tr>
</tbody>
</table>

Fig. 35. Relationship between environmental samples and deposition type.

Number of Environmental Samples by Types of Soil from the Oulanka River and from Border

Number of Environmental Samples (1 kilometer spacing)

<table>
<thead>
<tr>
<th>Soil type</th>
<th>River</th>
<th>Border</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil type: Silt</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Soil type: Clay</td>
<td>72</td>
<td>98</td>
</tr>
<tr>
<td>Soil type: Sand</td>
<td>42</td>
<td>32</td>
</tr>
<tr>
<td>Soil type: Gravel</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>Soil type: Other</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Fig. 36. Relationship between environmental samples and soil type.

Number of Environmental Samples by Types of Rock from the Oulanka River and Border

Number of Environmental Samples (1 kilometer spacing)

<table>
<thead>
<tr>
<th>Rock type</th>
<th>River</th>
<th>Border</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rock type: Granite</td>
<td>1</td>
<td>43</td>
</tr>
<tr>
<td>Rock type: Sandstone</td>
<td>34</td>
<td>36</td>
</tr>
<tr>
<td>Rock type: Basalt</td>
<td>47</td>
<td>98</td>
</tr>
<tr>
<td>Rock type: Limestone</td>
<td>25</td>
<td>8</td>
</tr>
<tr>
<td>Rock type: Oolitic</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>Rock type: Other</td>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

Fig. 37. Relationship between environmental samples and rock type.

Number of Environmental Samples by Nearest Water Source from the Oulanka River and Border

Number of Environmental Samples (1 kilometer spacing)

<table>
<thead>
<tr>
<th>Nearest Water Source</th>
<th>River</th>
<th>Border</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water: Lake</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>Water: Pond</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Water: Post</td>
<td>25</td>
<td>27</td>
</tr>
<tr>
<td>Water: River</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Water: Stream</td>
<td>62</td>
<td>69</td>
</tr>
<tr>
<td>Water: Brook</td>
<td>12</td>
<td>45</td>
</tr>
</tbody>
</table>

Fig. 38. The frequency and type of water sources nearest to each environmental sample area compared by transect.
Floatation

Upon arrival at the Social Systems Analysis Laboratory at the State University of New York at Buffalo, the soil samples were laid out to dry in preparation for floatation. The Department of Anthropology at the University at Buffalo had recently purchased the new Model A Flote-Tech Floatation Machine that had been recently reviewed in American Antiquity. This machine had been designed by R.J. Duasman in 1989. The unit consists of two 50 gallon tanks, an air supply, a water flow control valve, a water pump, and a hand pump. The separated materials are then received by a support pan with screen and the course fraction box were then removed from the floatation machine and laid out to dry. Following thorough drying of the fine and course fraction elements, the material was analyzed.

Analysis

For the purposes of this analysis we used the presence/absence of certain materials within each sample. The fine fraction screen which contained the floatable material was divided up into wood, including twigs, bark and charcoal, and plant material, including fern, peat and seed. Rock was also included in special cases. The coarse fraction was separated into sedimentary rock, quartz and possible heavier plant material that may have been left behind. Also, any miscellaneous findings were recorded for both sets of samples.

One sample at a time was gently shaken into the sediment basket and separated into floatable (fine fraction) and non-floatable (coarse fraction) materials by four air flow jets. Following this, the three back jets were turned up to push the remaining floatable materials into the fine fraction screen. The fine fraction support pan with screen and the course fraction box-under the support pan with fine fraction nylon screen thread diameter and a coarse fraction box-under the support pan with screen and the course fraction box-under the support pan with screen and the course fraction box-under the support pan with screen and the course fraction box-under the support pan with screen and the course fraction box-under the support pan with screen and the course fraction box-under the support pan with screen and the course fraction box-under the support pan with screen and the course fraction box were then removed from the floatation machine and laid out to dry. Following thorough drying of the fine and course fraction elements, the material was analyzed.

One sample at a time was gently shaken into the sediment basket and separated into floatable (fine fraction) and non-floatable (coarse fraction) materials by the four air flow jets. Following this, the three back jets were turned up to push the remaining floatable materials into the fine fraction screen. The fine fraction support pan with screen and the course fraction box were then removed from the floatation machine and laid out to dry. Following thorough drying of the fine and course fraction elements, the material was analyzed.

4. Artifacts

Description

The survey was highly selective concerning the amount of artifacts which were collected. As noted in the objectives of the project, the primary concern was the surface location of sites, not the subsurface collection of artifacts. However with this in mind, some artifacts were collected due to their importance to site identification and understanding. The following is a list and description of the artifacts recovered for analysis.

Prehistoric artifacts

Lithic material
37 quartz flakes
1 quartzite flake
1 core
1 scraper
2 raw material
23 fire-cracked stones

Historic artifacts

Metal
1 scythe blade
1 square nails

Flora and fauna remains
1 sample of seeds from site #1045
2 pieces of reindeer jawbone collected from a trap discovered by the River team.

XI. Conclusions

The survey results are preliminary at this stage. However, one may confidently state that the data paints a picture of considerable human interaction in the Kuusamo border region and more intense interaction in the Oulanka river valley. This is true both in prehistoric and historic periods. Furthermore the environmental impact of these areas are evidently very important to the settlement and utilization of Northeastern Finland. Specifically, attention to wetland environment and to suitable biospheres for hunting are significant to the locality and type of sites. Also an understanding of environmental constraints are instrumental to understanding the border as a political and historical phenomenon. In particular, the survey result in the following:

1. More than 150 kilometers were covered in a systematic line survey approximately 50m wide.
2. More than 80 archaeological sites were discovered and documented.
3. 70% of the sites were located on the river in contrast to the 30% located along the border.
4. Most of the sites were structures and pitfalls displaying features and surface evidence.
5. Low frequency sites included cairns, mounds, boundary markers, cooking pits and stray finds.
6. Structures, hut depressions, and pitfalls follow a pattern of greater frequency in the highlands (woodlands and terraces) and decreasing as one approaches rivers and lake shores.
7. Cooking pits are inversely related to cairns and boundary markers and are most frequently found in riverine environments.
8. Slope and drainage are important and particular types of sites prefer particular combinations.
9. Historic structures were frequently cabins, barns, and houses primarily with peat/log foundations and were mostly in ruins.
10. Quartz and quartzite limestones, fire-cracked rock, as well as a variety of metal artifacts were found.
Finally, the Finnish Russian border area in Kuusamo has been relatively unspoiled by development because of its relatively remote location, the existence of both Finnish and Russian parks, and the national policies of both countries keeping people out of the border area. Recent, large scale forestry may because of its relatively remote location, the existen­


Acknowledgements. Major support provided by: National Science Foundation, Thule Institute/University of Oulu, Institute of Archaeology/University of Oulu, Department of Anthropology/State University of New York at Buffalo.

Special thanks to: The Finnish Frontier Guard of the Kuusamo region, Kuusamon Kansanopisto and Forest and Park Service, Ostrobothnia Park area.

Additional Thanks to: Eric Thurston, Jon Carroll, Anna Rajala, Phillip Mitchell, Donna Chesnut, and the APY 104 class in assisting in the processing and analysis of data and materials in the laboratory at the State University of New York at Buffalo.

References


Fig. 40. Presence of artifacts by number of sites.

Next, the Finnish Russian border area in Kuusamo has been relatively unspoiled by development because of its relatively remote location, the existence of both Finnish and Russian parks, and the national policies of both countries keeping people out of the border area. Recent, large scale forestry may because of its relatively remote location, the existen­


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Additional Thanks to: Eric Thurston, Jon Carroll, Anna Rajala, Phillip Mitchell, Donna Chesnut, and the APY 104 class in assisting in the processing and analysis of data and materials in the laboratory at the State University of New York at Buffalo.

References


Appendix.

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