10 Archaeological research in the former municipalities of Koivisto and Kuolemajärvi, Karelian Isthmus in 2003: results and observations

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Abstract

This paper presents the archaeological studies conducted by Finnish and Russian researchers in 2003 in the former municipalities of Koivisto and Kuolemajärvi in the Karelian Isthmus. The environmental history and archaeological research history of the area are also summarized. Short surveys and small-scale test excavations at three sites revealed the long time span and versatility of the prehistoric habitation in the area. The oldest sites located in the surveys seem to date from the Mesolithic period. A test excavation was carried out at one of these sites. The whole Neolithic period also seems to be represented, and one of the test-excavated sites dates to the Early Metal period based on the presence of a Textile-impressed Ware pot broken *in situ*. The area holds high research potential for further prehistoric studies.

10.1 Introduction

When discussing the archaeological research situation of the former municipalities of Koivisto (Ru. Primorsk) and Kuolemajärvi (Ru. Pionerskoe) the circumstances differ in many respects from the other areas presented in this publication. Whereas in Kaukola (Ru. Sevast'janovo), Räisälä (Ru. Mel'nikovo), Kurkijoki (Ru. Kurkiëki) and Johannes (Ru. Sovetskij) Stone Age and later excavations were conducted in large numbers, the archaeological investigations made prior to World War II within the two municipalities under discussion are few. These include only one short and small excavation in Kuolemajärvi in 1936 (Pälsi & Voionmaa 1936) and one inspection of a stray find location in Koivisto in 1937 (Leppäaho 1938). Also the number of Stone Age stray finds is much smaller than in many other places in the Karelian Isthmus.

Some archaeological fieldwork was done in the adjacent areas in the Soviet times by archaeologist Vladimir I. Timofeev from and the Institute for the History of Material Culture, Russian Academy of Sciences, St. Petersburg (hence IIMK/RAN) (Timofeev 1986; Gerasimov *et al.* 2003). Still, it was not until the late 1990s and first years of the 21st century that the fieldwork intensified. These new studies include the inspections and surveys by the archaeologists from the Lahti City Museum, Finland and the IIMK/RAN (Lisicyn 2004; Lisicyn *et al.* 2004; Potiainen & Adel 2003; Takala 2005). Also the archaeological survey and trial excavations executed in the area in May 2003 in co-operation with the IIMK/RAN, Peter the Great Museum of Anthropology and Ethnogra-

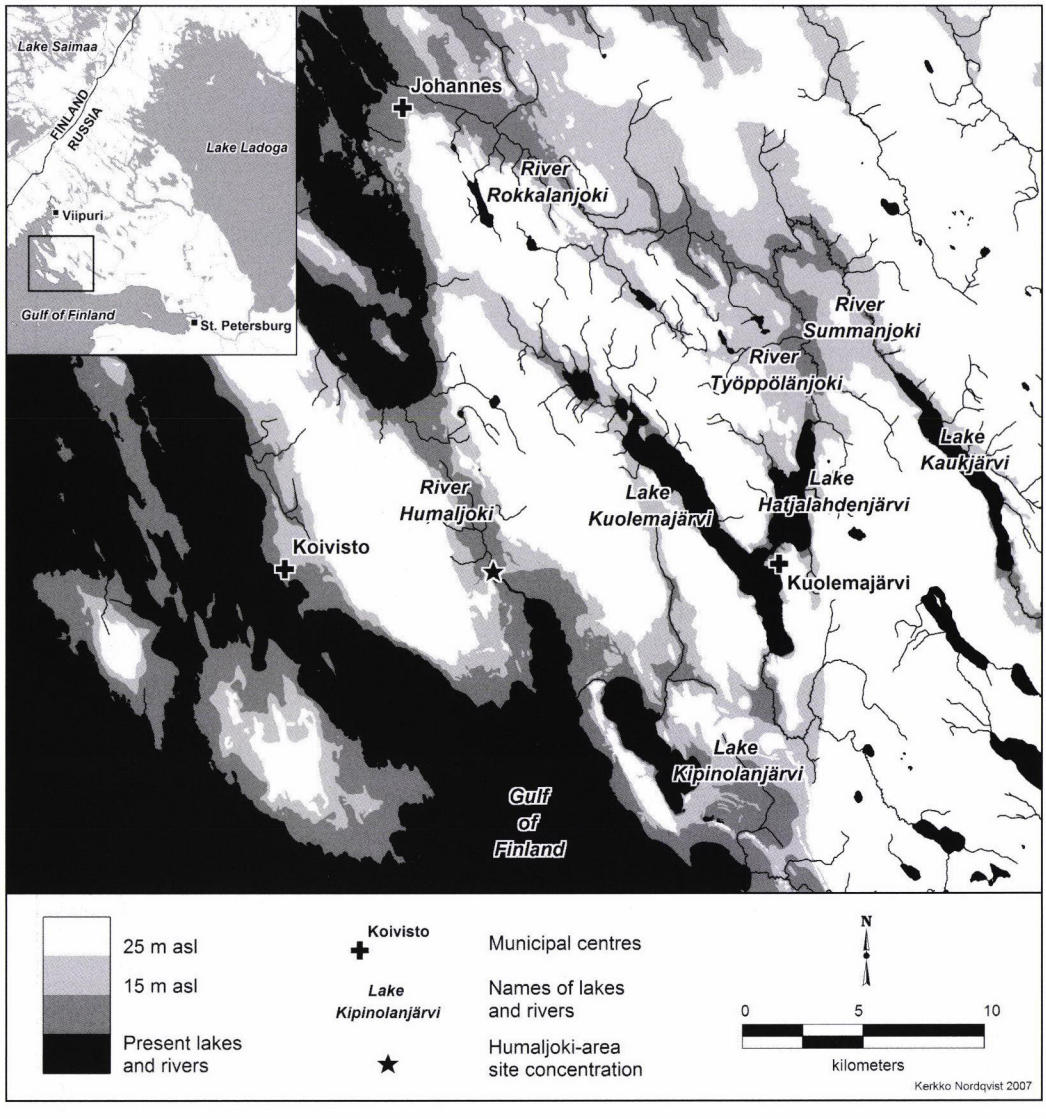

Figure 10.1 The location of the studied municipalities in the Karelian Isthmus. Map shows the 15-and 25-m asl curves and present waters giving a rough idea about the environment during the Stone Age. The isostatic tilting in the area was considerable during the Stone Age but is not shown in the water level reconstructions. (Map: K. Nordqvist)

phy (hence Kunstkamera) and the University of Helsinki, Department of Archaeology (Lisicyn 2004; Nordqvist & Seitsonen 2004; see also Lisicyn *et al.* 2004) belong to this new phase of archaeological studies in the area. The funding for these studies came from a grant of Russian Foundation for Fundamental Research (RFFI No 02-06-80469) and for the rescue excavations conducted at the site Koivisto 4 Humaljoki Patamäki 1 from OAO Gazprom[1].

The purpose of this paper is to give an outline of the fieldwork in the two municipalities in 2003 and of the results, although still preliminary in nature, achieved in these studies. The geographical and hydrological development of the area is discussed to provide background for

the archaeological observations. Also the distribution and location and function of the new dwelling sites is briefly presented in relation to the environment.

10.2 Geography and hydrological history of the study area

Koivisto and Kuolemajärvi are located in the western part of the Karelian Isthmus, by the Gulf of Finland (Fig. 10.1). The neighbouring municipalities include Johannes, the Viipuri rural municipality (Ru. Vyborg) and Heinjoki (Ru. Veščevo) in the north, Muolaa (Ru. Pravdino) in the north-east and Uusikirkko (Ru. Poljany) in the east. The area covers a stretch of the Baltic Sea coast including the south-east – north-west directed Cape Koivistonniemi (Ru. poluostrov Kiperort) and several large islands in front of it and also large areas inland. All in all the area of the municipalities is over 600 km² and altogether covers an area of 21 map sheets (each 10 x 10 km, scale 1:20 000). However, the region where the current archaeological studies have taken place is much smaller and includes only areas near Lakes Kipinolanjärvi (Ru. ozero Vysokinskoe) and Kuolemajärvi (Ru. ozero Pionerskoe) and Humaljoenlahti Bay (Ru. zaliv Ermilovskij) within map sheets 4021 04, 05 and 08 (numbering refers to old Finnish 1:20 000 topographical maps measured in the 1930s). It is also this area that the present study mostly focuses on.

The study area belongs to the geological zone of the middle and southern Karelian Isthmus that dominates the area south of the River Vuoksi (Ru. reka Vuoksa). This zone is characterized by a landscape where thick glacial sediment layers cover the bedrock. The most common soil is till but there are also wide sand and gravel barrens in the study area. There are no large eskers in the area, however, bogs are numerous. Along the coast there are also vast sandy shores and large areas of eolian dune formations. (Saarnisto 2003: 26, 44–47.) When leaving the coast the terrain usually steeply rises, normally reaching the elevation of c. 40–55 m asl. The highest areas in the study area are as high as 70–80 m asl. The uplands are cut by valleys of lake basins and river beds.

When considering the present bodies of water the Koivisto area is predominately influenced by the Gulf of Finland. Also Kuolemajärvi is located by the sea but includes large inland lake basins as well. In the middle of the study area there is the long south-east – north-west directed Lake Kuolemajärvi and connected to it through a narrow strait the south-west – north-east directed Lake Hatjalahdenjärvi (Ru. ozero Aleksandrovskoe) (Fig. 10.1). The latter is further connected through the Rivers Työppölänjoki (Ru. reka Aleksandrovka) and Summanjoki (Ru. reka Kamyševka) to the south-east – north-west directed Lake Kaukjärvi (Ru. ozero Krasavica) located on the border of the Kuolemajärvi and Uusikirkko municipalities. The Rivers Työppölänjoki and Summanjoki join with the River Rokkalanjoki (Ru reka Gorohovka) which runs towards the north-west and discharges into the Gulf of Finland at Johannes. Lake Kipinolanjärvi, which is currently separated from the Baltic basin by narrow dunes and sandy barrens, is situated at the base of Cape Koivistonniemi, near Humaljoenlahti Bay.

The hydrological history of the area follows the main development of the eastern Gulf of Finland, which was a decisive factor in the formation of the landscape and environment. After the Ice Age, when most of the Karelian Isthmus was covered by the Baltic Ice Lake with water levels as high as 90 m asl, part of the central Karelian Isthmus was supra-aquatic (Saarnisto 2003: 46, 55; 2008, this volume). This area, however, does not include the study area but is located to the east of it. A central feature determining the ex-

tent of the effects the hydrological development had in the study area is the high ancient shore wall running from Terijoki (Ru. Zelenogorsk) to Johannes along the present seashore. Currently this area is characterized by large sandy areas and dunes. The areas above the wall have been dry land since the regression of the Baltic Ice Lake. Only the area between the shore wall and the present sea, the width of which varies from less than a kilometre to some kilometres, was affected by later sea level fluctuations. Also all the lakes situated above this wall have been more or less independent since that time. Only Lakes Kuolemajärvi and Hatjalahdenjärvi, possibly also Lake Kaukjärvi, were affected by the development of the sea. (Saarnisto 2003: 58–59; 2008, this volume.) In other words, most of the area south-east of Lake Kipinolanjärvi was not much affected by the transgressions during Stone Age, only within the narrow area below the shore wall fluctuations were felt. However, north of Lake Kipinolanjärvi transgressions had considerable effects and reached deep inland through the present lake basins and river beds.

Following the Baltic Ice Lake the regression during the Yoldia Sea stage (8700–9500 BC, i.e. 10 700–11 500 BP[2]) combined with the rapid isostatic land-uplift revealed large areas of the Karelian Isthmus but the subsequent Ancylus transgression inundated part of the already exposed area. The maximum shores of the Ancylus transgression in the study area are located between 25 m asl (in Koivisto) and 15 m asl (in Uusikirkko). After the culmination of the transgression, the water level started to lower, and at the end of the Ancylus period c. 8100 BC (10 100 BP) the Baltic basin reached its lowest level in the area of the eastern Gulf of Finland. The shoreline at this time is estimated to have been in the Lake Kipinolanjärvi area c. 7 m asl and c. 1 m asl near St. Petersburg. (Björck 1995; Miettinen 2002: 79–82, 84.)

The Litorina transgression began in the area around 7000 BC (9000 BP) and the transgression maximum in the Middle Karelian Isthmus occurred c. 5000–5500 BC. The maximum Litorina shore in the study area is around 15 m asl according to the isobases presented by Arto Miettinen (2002: 82, fig. 50): the 15 m asl isobase presented by him runs through the Koivisto area and the 10 m asl isobase through Terijoki. The maximum shoreline in the Lake Kipinolanjärvi region is c. 13 m asl. The Litorina transgression, that most likely also inundated several dwelling sites in the area, ended around 4000 BC (6000 BP). After this the water level apparently gradually lowered to its current position although smaller later fluctuations might not be visible in the data. (Miettinen 2002: 79–82, 87.)

During the minimum phase at the end of the Ancylus period the division of land and water was not that different from what it is today but during the higher water level stages of the Ancylus and Litorina periods the landscape in the study area looked very different (Fig. 10.1). Lake Kipinolanjärvi was a shallow bay connected through its open north end to the present Humaljoenlahti Bay. In the west it was separated from the sea by a sand bar and in the south-east a sandy isthmus separated it from a currently boggy basin that, at least during the Ancylus time, probably was a shallow bay or a lagoon. Humaljoenlahti Bay was also larger than it is today and extended farther to the north-west. During the Ancylus and probably also the Litorina maximum it reached all the way to Makslahti Bay (Ru. buhta Ključevskaja) forming a narrow strait separating Cape Koivistonniemi from the mainland. Transgressions also reached the large lakes within the study area. Lakes Kuolemajärvi, Hatjalahdenjärvi and Kaukjärvi were all larger in extent, especially during the Ancylus stage. These lakes were connected to each other

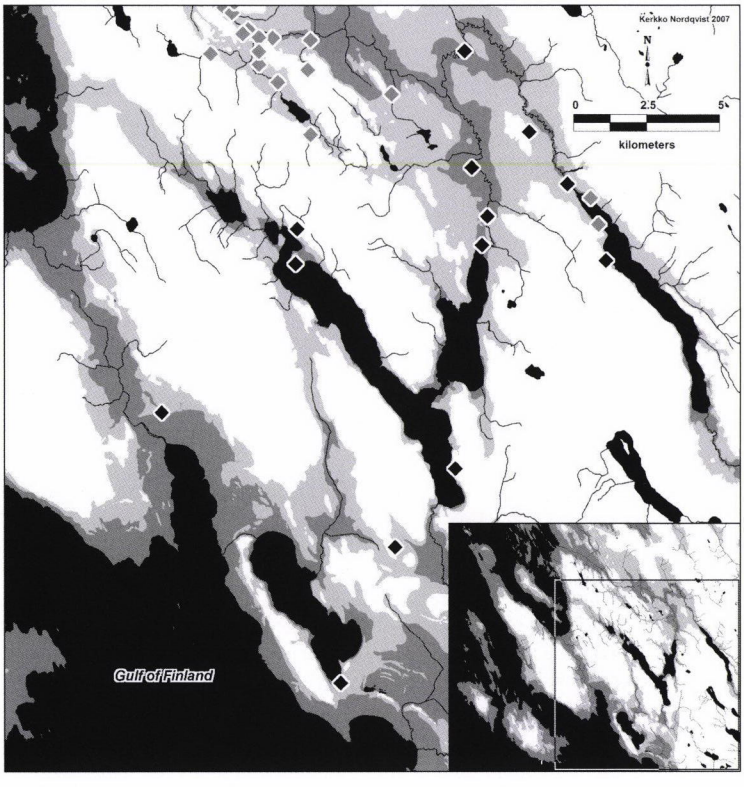

Figure 10.2 Stray finds in the study area (black) and its surroundings (grey) (the location data for the former Uusikirkko municipality adopted from Takala 2005). Reconstructed shore levels at 15 and 25 m asl (see Fig. 10.1 for legend), present waters in black. (Map: K. Nordqvist)

by straits situated in the present-day river valleys. This whole complex was connected to the Baltic basin by a strait flowing within the River Rokkalanjoki river valley. The lakes and rivers formed a long, tangled waterway of fjords penetrating inland in a roughly north-west – south-east direction.

10.3 Research history and archaeological material

There are only 22 Stone Age stray finds from the study area: 19 from Kuolemajärvi and 3 from Koivisto. The only locatable find from Koivisto (NM 10244) was found at a place called Kirkkohiidenhiekka near the Humaljoki village (Ru. Ermilovo) (Fig. 10.2). In addition there are two stone artefacts that were delivered from Koivisto to the Museum of Viipuri in the late 1800s but their find location is not known. In addition there is information of several lost or otherwise not collected Stone Age finds from both municipalities (Saari 1890).

In Kuolemajärvi stray finds have been found in several locations. Three artefacts (NM 10290; 10350; 10444: 3) were found by soldiers in the Muurila village (currently uninhabited), on the south-eastern shore of Lake Kipinolanjärvi, in the area of army's anti-aircraft troops training camp. Stray find locations are situated also along the shores of Lake Kuolemajärvi. At its northern end, in the village of Näykki (today unsettled), four stone artefacts (NM 2658: 87–89; 9473: 1) were found. At the southern end, in the village of Ylä-Kirjola (presently also depopulated), a stone artefact (NM 2658: 85) was found and near it one more stone artefact (NM 11841) was most likely discovered on the south-eastern shore of the lake in the Akkanen

Figure 10.3 Finnish soldiers bathing outside the tent-sauna on the southern shore of Lake Kipinolanjärvi. Some finds were made in 1936 behind the sauna, Pälsi & Voionmaa's excavation trenches of the same year were located just outside the right edge of the photo. Picture taken from south-west. (Photo: S. Pälsi 1936, National Board of Antiquities)

village (Ru. Krasnaja Dolina). The rest of the stray finds were made near the northern ends of Lakes Hatjalahdenjärvi and Kaukjärvi and in the area of the Rivers Työppölänjoki and Summanjoki connecting these lakes in the villages of Työppölä (currently unsettled), Summa (presently uninhabited) and Iivanala (part of present-day Kamyšovka) (NM 2658: 86; 9470: 3–4; 9474; 9991; 10012; 10178: 1) (for more detailed descriptions of these finds and the find locations, see Takala 2005: 67—84).

The first finds were collected by Oskari Saari, who in 1889 travelled in the area as the scholar for the Finnish Antiquarian Society (Fi. Suomen Muinaismuistoyhdistys) (Saari 1890). After his expedition no finds were delivered to the State Historical Museum (predecessor of the National Museum of Finland) for decades – the rest of the finds were made in the 1930s. These later find places are relatively easily locatable and some of these locations were also inspected by archaeologists before the war. In fact, all the scarce archaeological fieldwork conducted in the current study area (as well as in many other places) before World War II was connected to stray find locations.

In Kuolemajärvi the archaeologists Jouko Voionmaa and Sakari Pälsi made in 1936 a small test excavation in the area of army's anti-aircraft troops training camp, next to a tent-sauna on the south-eastern shore of Lake Kipinolanjärvi (Fig. 10.3). They opened two small trenches

perpendicular to the shore and found remains of a Stone Age dwelling site including two rectangular fireplaces, stone flakes and small morsels of unidentifiable ceramics. (Pälsi & Voionmaa 1936). In connection to the 2003 studies the old excavation place was visited and also new observations were made within the former Muurila anti-aircraft training camp (Kuolemajärvi 1–2 Muurila Ilmatorjuntaleiri 1 and 2).

In 1937 archaeologist Jorma Leppäaho inspected and documented the stray find location of Kirkkohiidenhiekka in Koivisto. He reported that the finder of the artefact had observed burnt stones and sooty soil at the find place and concluded that there probably was a Stone Age dwelling site at the location but made no further studies (Leppäaho 1938). In 2003 a dwelling site including a dwelling depression was found at this location (Koivisto 7 Humaljoki Kirkkohiidenhiekka 1).

After Leppäaho's 1937 inspection the archaeological activities halted for decades, especially near the seashore where no studies were conducted during the Soviet times. Only around the northern end of Lake Kaukjärvi archaeological investigations were made by Vladimir I. Timofeev, who in 1984 conducted test excavations at the Middle Neolithic dwelling site Kamyševka and at the possible Early Metal Period site Kamenka 2. He also studied the Neolithic site Uusikirkko Kaukjärvi Kelonen (Kamenka 1). (Timofeev 1986; Gerasimov *et al.* 2003: 16–17.) This site was excavated already before World War II by Aarne Europaeus in 1926 (Europaeus 1926) and Sakari Pälsi in 1933 (Pälsi 1933).

The archaeologists paid no attention to the Metal Periods within the area, neither prior to World War II, nor during the Soviet era: no Iron Age studies were conducted in the municipalities. From Kuolemajärvi are known three Iron Age stray finds and historical sources mention Koivisto (Björkö) as a trading place, but no actual finds have been made there. (Uino 1997: 242–243.)

The archaeologists returned to the area around the turn of the millennium. The first studies include the inspections of sites and stray find locations in the former Äyräpää jurisdictional district by the Lahti City Museum in 1998–2002 (Poutiainen & Adel 2003; Takala 2005: 4). In May 2003 the IIMK/RAN, Kunstkamera and the University of Helsinki, Department of Archaeology carried out surveys and small excavations in the area (Lisicyn 2004; Nordqvist & Seitsonen 2004). This fieldwork was a straight continuation of the fieldwork conducted by the participants in the Karelian Isthmus since 1998 (see Siiriäinen *et al.* 2008, this volume; Lavento 2008, this volume). Starting on the eastern side of the Karelian Isthmus between 1999–2002 (Halinen *et al.* 1999; Halinen 2003; Timofeev 2002; Timofeev *et al.* 2002; Gerasimov 2004) the focus turned to the western side with the Johannes survey in 2002 (Uino *et al.* 2003; Lisicyn 2003; also Carpelan *et. al* 2008, this volume).

In May 2003 fieldwork was conducted for two weeks all together: four days were spent surveying and ten days excavating. The survey included both municipalities but excavations were made in Koivisto only. Deviating from other expeditions presented in this publication much of the fieldwork should be classified as rescue archaeology in character. It was necessary to survey and partly excavate the surroundings of the Baltic gas pipe line leading to the Koivisto oil terminal because of the plans to build a new pipe line next to the old one. Still, regardless of these pragmatic objectives, the studies had scientific aims also, namely to achieve some understanding of the nature and extent of the Stone Age habitation in this previously relatively unstudied area.

Despite the limited time, several logistical problems and the focus on rescue archaeology,

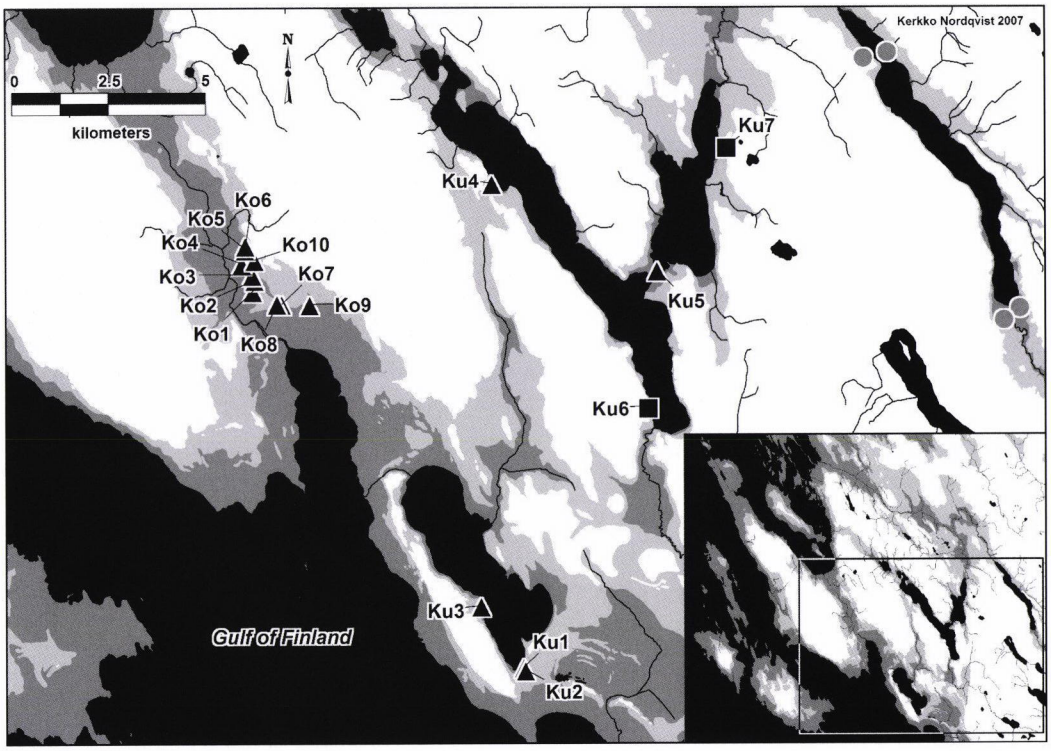

Figure 10.4 Dwelling sites in the study area and its surroundings. Sites found in IIMK/RAN and University of Helsinki's studies marked with black triangles and in IIMK/RAN and Lahti City Museum's studies with black squares, sites in Uusikirkko shown as grey dots (for numbering, see Appendix 1, abbreviations: Ko=Koivisto, Ku=Kuolemajärvi). Water levels at 15 and 25 m asl (see Fig. 10.1 for legend), present waters in black. (Map: K. Nordqvist)

altogether 14 new Stone Age – Early Metal Period sites were found: four in Kuolemajärvi and ten in Koivisto (Figs. 10.4 and 10.5; Appendix 1) (see Lisicyn 2004; Nordqvist & Seitsonen 2004; Lisicyn *et al.* 2004). These include seven dwelling sites and seven quartz find locations. The only previously known site in the area, Kuolemajärvi 1 Muurila Ilmatorjuntaleiri 1, was also inspected. In addition, excavations were conducted in Koivisto in the River Humaljoki (Ru. reka Ermilovka) valley at three sites, Koivisto 1 Humaljoki Pontiaho 1, Koivisto 4 Humaljoki Patamäki 1 and Koivisto 5 Humaljoki Patamäki 3 situated close to or right on the planned pipe line. Based on the survey and excavation observations the dating of the sites found ranges from the Mesolithic to the Early Metal Period.

In addition to the archaeological material described above, there are two more prehistoric find locations in the Kuolemajärvi area, namely Kuolemajärvi 6 Harkkosienkangas and Kuolemajärvi 7 Työppölä Kuoppajärvi, which were found later in the summer of 2003 on an expedition by the IIMK/RAN and the Lahti City Museum, Finland (Poutiainen & Adel 2003; Gerasimov *et al.* 2003: 26). Also, along the same water system are the quartz find locations of Krasavica 1 and 2, located at the southern end of Lake Kaukjärvi in the former Uusikirkko (Gerasimov *et al.* 2003: 29), as well as the numerous dwelling sites in the Johannes area in the north (see Carpelan *et al.* 2008, this volume). There is also a large amount of stray finds from the Uusikirkko and Johannes municipalities mostly located along this same water system (Fig. 10.2).

10.4 Stone Age and Early Metal Period dwelling sites in Koivisto and Kuolemajärvi – the 2003 studies

10.4.1 The Survey

In Kuolemajärvi the studies were conducted along the shores of Lakes Kipinolanjärvi and Kuolemajärvi. The only previously known dwelling site, Kuolemajärvi 1 Muurila Ilmatorjuntaleiri 1, located on the south-eastern shore of the former lake, was inspected (Figs. 10.3 and 10.4). It is situated right above the present day shoreline, at c. 12 m asl, which would point towards a Late Neolithic date (see also Saarnisto 2008, this volume). During this time the lake had already been isolated from the Baltic basin and the site was situated on a narrow isthmus between the lake and a small pond in the background. No new finds were made because the area is overgrown and partly destroyed by rubbish pits (see also Appendix 1).

A new dwelling site, Kuolemajärvi 2 Muurila Ilmatorjuntaleiri 2, was found c. 150 m south – south-east from Ilmatorjuntaleiri 1. Located on a higher terrace (c. 14 m asl) it is situated above the Litorina maximum shore and originally was apparently located by a regressive or isolated basin. According to the finds, which were collected from a large area on top of the terrace, the site dates to the Typical Combed Ware Period, which also fits the shoreline displacement date well.

The site Kuolemajärvi 3 Muurila Lautametsänniemi, located on the western shore of the lake, can not be much discussed: only one quartz flake was found here on top of a steep bank providing evidence for human activities also on this isthmus between the lake basin and the sea.

A quick survey along the shores of Lake Kuolemajärvi resulted in two new sites. The first, Kuolemajärvi 4 Kolkkala Notko-ojansuu, is located on the western shore of the lake. It is a small site on a restricted cape descending steeply to the lake. No datable material was found and its elevation (c. 14 m asl) allows for only a rough Neolithic date to the site. The other find location, Kuolemajärvi 5 Hatjalahti Tukikohta, is situated approximately on the same elevation at the tip of a cape on the western side of the strait connecting Lakes Kuolemajärvi and Hatjalahdenjärvi. Observation was badly hindered by the fact that the site had been almost totally destroyed by fortifications in World War II; the finds included both quartz artefacts and World War II ammunition.

Figure 10.5 Logistical problems with finding drivable roads during the survey of Kuolemajärvi in May 2003. (Photo: K. Nordqvist 2003)

In Koivisto the studies were focussed next to the village of Humaljoki, to the north of Humaljoenlahti Bay, along the River Humaljoki valley. During the Stone Age the river valley formed either a bay or a strait leading to north-west. The dwelling site Koivisto 7 Humaljoki Kirkkohiidenhiekka 1 was found at the stray find location mentioned above and inspected in 1937 by J. Leppäaho (1938). In the same road cut where the stray find was picked up in the 1930s, were now discovered quartz artefacts, burnt bones and ceramics. Next to the road cutting, on top of a small ridge (c. 16–17 m asl), a large (17 x 9 x 0.5 m), oval dwelling depression with traces of a cultural layer was observed. Also on the western side of the road observations of a cultural

layer were made but modern sand pits and rubbish heaps prevented further studies here.

The ceramic finds next to the dwelling depression date to the Late Neolithic, which makes the place interesting (see also Seitsonen 2005). It is located well above the elevation of the Litorina maximum, which means that during the Late Neolithic the shore had been at least 200 m away from the site. However, on the northern side of the ridge there is a swampy basin that might have been a pond during prehistoric times. Also, an earlier period of use of the site is probably hinted at by the old stray find, a cradle runner shaped axe.

Figure 10.6 O. Seitsonen pointing out Textile-impressed Ware *in situ* in the ditch bank at Koivisto 1 Humaljoki Pontiaho 1 site (cf. Fig. 10.8). (Photo: K. Nordqvist 2003)

To the west of the Kirkkohiidenhiekka 1 dwelling site quartzes and burnt bone were found from the Koivisto 8 Humaljoki Kirkkohiidenhiekka 2 site. The site has been totally destroyed by large scale sand hauling and therefore its further qualities remain unknown. Both Kirkkohiidenhiekka 1 and 2 are located on a several hundred meters long and wide field of fine eolian sand.

More dwelling depressions were found to the east of the Kirkkohiidenhiekka sites. At the Koivisto 9 Humaljoki Suurpelto site two dwelling depressions, oval in shape and 5 x 3.5–4.5 x 0.3–0.4 m in size, were recorded. A charcoal-mixed cultural layer was observed in the depressions and quartz and Late Neolithic ceramics were found in the nearby road cutting. The elevation of this site, c. 12 m asl, unlike Kirkkohiidenhiekka 1, corresponds well with the date given by the ceramics.

The rest of the dwelling sites were found on the eastern edge of the River Humaljoki valley in Koivisto (Fig. 10.11). Here the Pontiaho 1–4 and Patamäki 1–4 sites are situated on ancient shore formations on a wide even pine barren. The southernmost of these sites, Pontiaho 1, is located on two different shore formations. The find areas Pontiaho 1 A–B are situated on the Late Neolithic – Early Metal Period shore level (c. 11 m asl), in front of a steep shore bank. The survey finds include quartz and burnt bones at Pontiaho 1 B as well as numerous sherds of Textile-impressed Ware found in a ditch Pontiaho 1 A (Fig. 10.6). Because of the ceramic finds, a small test excavation was later opened at the site (see below).

The find areas Pontiaho 1 C–D, as well as the sites Pontiaho 2 and Pontiaho 3 are located on the top of a higher terrace (13–14 m asl). The finds from these locations include only quartz and burnt bones. At the site Pontiaho 2 observations of fire-cracked rocks and a possible, weak cultural layer were also made. According to their elevation, unless predating the Litorina transgression, the sites can not have been in use before the Typical Combed Ware Period.

Further north along the river valley there is a cluster of four more sites on the south-western and western side of the Patamäki hill. The first of these, the dwelling site Patamäki 1, is located right on the pipe line running in a north-east – south-west direction. Finds were made in several different spots in an area of c. 100 x 150 m (Fig. 10.9). Part of the site has been totally destroyed by the pipe line as several meters of sand was removed from the line: some finds and weak

Figure 10.7 Excavations underway at the Early Metal Period site Koivisto 1 Humaljoki Pontiaho 1, Inga Stasevič and Stanislav Bel'skij at work. Picture taken from west. (Photo: K. Nordqvist 2003)

patches of a cultural layer were still visible on the walls of this gas pipe line trench. Because of the extension of the pipe line, test excavations and frequent test pitting were also conducted in the area (see below). Dating of this vast dwelling site is problematic: elevations (12–15 m asl) place it on shores dating from the Early Combed Ware to the Late Neolithic times.

The sites Patamäki 3 and 4 are located just to the north of the Patamäki 1 site, again forming a chain of sites. Patamäki 3 is located on top of a terrace that has been partly destroyed by a road cut and a ditch. Some finds were located in the ditch: a few quartz artefacts and a fragment of a polished stone artefact. A test excavation area was opened on the terrace above the ditch (see below). According to finds and other observations at the site it is possible that Patamäki 3 is a Mesolithic site inundated by the Litorina transgression, although its elevation (12 m asl) could also point to a Late Neolithic dating. From Patamäki 4 only some quartz flakes were found on a road running on the fields. Elevation (11–12 m asl) points to a date from the end of the Typical Combed Ware Period to the Early Metal Period.

The Patamäki 2 site, located c. 200 m northeast from Patamäki 1, included quartz artefacts, burnt bones and a fragment of a polished stone artefact, apparently of Onega green slate. The site is located at the intersection of the pipe line and the Humaljoki-Makslahti road and is badly disturbed by these constructions. No traces of a cultural layer were observed here. The finds do not give grounds for dating, but the elevation, 17–20 m asl, being well above the Litorina maximum, would allow a Mesolithic dating[3].

10.4.2 The Excavations

In late May 2003 small excavations were carried out at three sites found during the survey. The sites investigated included Koivisto 1 Humaljoki Pontiaho 1A, Koivisto 4 Patamäki 1 and Koivisto 5 Humaljoki Patamäki 3 in the River Humaljoki valley (Figs. 10.7 and 10.12). The excavations were lead jointly by the Finnish and Russian archaeologists. All of the studied sites are situated on the eastern side of the River Humaljoki valley, in the immediate vicinity of the area affected by the pipe line (see Lisicyn 2004; Nordqvist & Seitsonen 2004).

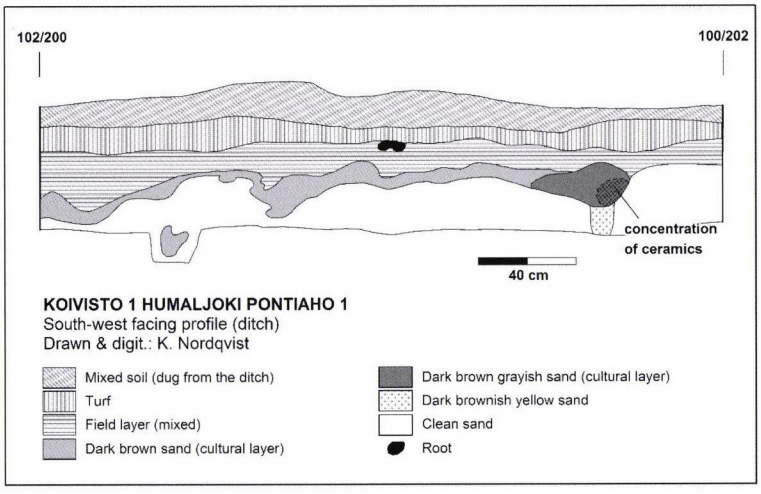

Figure 10.8 The south-facing profile of the ditch at Koivisto 1 Humaljoki Pontiaho 1.

10.4.2.1 Koivisto 1 Humaljoki Pontiaho 1

The site is located on top of a gentle south – south-west descending slope (c. 11 m asl), in front of a steep shore bank (top c. 13 m asl), on the border of an overgrown field and a forest. During the survey a concentration of c. 100 ceramic sherds was found in a ditch following the field-forest border. Consequently a small test pit (2 m²) was opened to the edge of the ditch, at the ceramic concentration.

The finds made during the excavations are mainly ceramics (over 600 sherds and morsels), all of which are Textile-impressed Ware. Numerous pieces bear textile impressions but decoration is scarce: only nine body sherds and all of the rim sherds (five pieces) were decorated with small pits. Other finds included only two quartz flakes and one piece of burnt bone.

It is evident that a ceramic vessel was found *in situ*. The distribution of the finds shows it clearly: majority of the sherds were found in a small concentration in the ditch profile and from the ditch itself (over 520 sherds) (Figs. 10.7 and 10.8). The rest of the finds came from the cultural layer around the concentration and from the soil dug up from the ditch. Unfortunately, due to the small size of the excavated area, not much can be said about the site itself. Finds were also made in a ditch following the top of the slope at least 30 m south-east of the excavation area, and quartz and burnt bone were observed also c. 30 m north-west. The location, being at least partly preserved from agricultural and other activities, bears good potential for future research.

10.4.2.2 Koivisto 4 Humaljoki Patamäki 1

The site is located c. 800 m north of Pontiaho 1, on a c. 15 m asl terrace. The terrace descends to west down to the swampy fields of the river valley. In the east terrain rises gently towards the Humaljoki-Makslahti road. Part of the terrace has been cut away by the pipe line (at places as much as 3 m down). Stone Age finds were made on both sides of the pipe line in a large area of c. 100 x 150 m (Fig. 10.9).

Guided by the surface finds two trenches (1 x 3 m) were opened on the southern side of the pipe line: however, only a few finds were recovered from them. After this, intensive test pitting was made in the area around the pipe line and the adjacent cleared electric line. Also the bottom of the pipe line was partly screened and some quartz finds recovered. Still, finds were few, altogether c. 40 quartz implements. No clear cultural layer was observed, apart from weak patches in the pipe line trench walls. Ap-

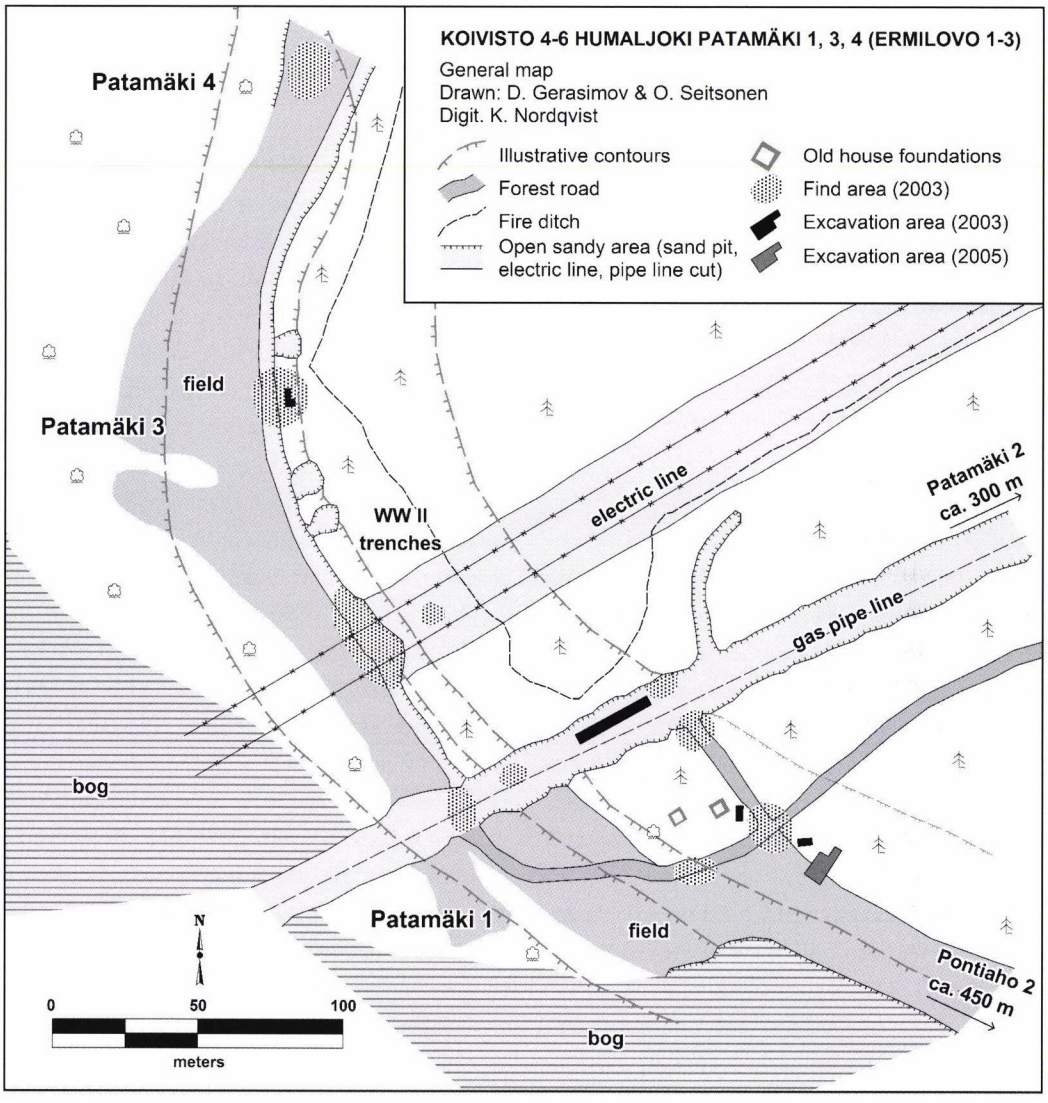

Figure 10.9 General map of the sites Koivisto 4–6 Humaljoki Patamäki 1, 3 and 4.

parently the line has destroyed large parts of the site, which comprises a large area with only few finds and structures[4].

10.4.2.3 Koivisto 5 Humaljoki Patamäki 3

The site is located c. 100 m north from the northernmost finds of the Patamäki 1 site, on top of a west – south-west descending terrace (c. 12 m asl) (Fig. 10.9). The terrace edge is destroyed by a ditch dug between the forest and a road track running in the fields below and in the surroundings also many small modern sand pits have been dug. The background rises quite steeply to another terrace (c. 14 m asl), where no finds were made despite the relatively good observation conditions (World War II trenches).

In the survey some quartzes and a fragment of a polished stone artefact were found in the

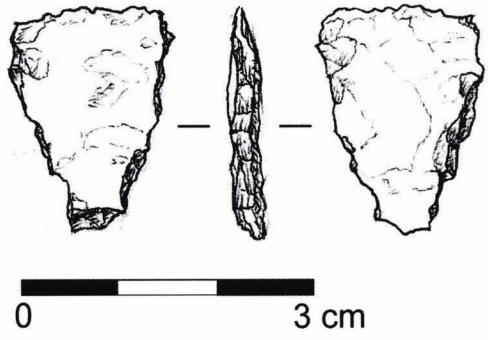

Figure 10.10 Oblique bladed quartz point from Koivisto 5 Humaljoki Patamäki 3 site. (Illustration: O. Seitsonen 2003)

ditch. A 5 m² excavation area was later opened above the ditch on the preserved part of the terrace. The finds were few, including mostly quartz and stone flakes, some of which were of Onega green slate. The only retouched artefact was an oblique bladed quartz point (Fig. 10.10) conventionally dated to the Mesolithic and Early Neolithic. There were no clear find concentrations and the finds seemed to be in a secondary position. Also no traces of an intact cultural layer were observed. Apart from the lower parts of two pit features only a sooty greyish brown layer was visible all over the area (Fig. 10.12). Based on the presence of the oblique bladed quartz point, the seemingly secondary position of the finds, and the patchy, possibly washed, cultural layer, it seems that the site has been covered by the Litorina transgression and consequently dates to the Mesolithic.

10.5 The Stone Age Settlement in Koivisto and Kuolemajärvi – Observations and Discussion

Because of the limited material no detailed analyses of the locations and environments of the sites is pursued here (cf. Nordqvist & Lavento 2008, this volume; Seitsonen & Gerasimov 2008, this volume). Still, general remarks can be made. When observing the location of the sites on a larger scale, the sites are situated predominately at the mouth areas and along the shores of bays and fjords; the sites do not seem to have been located right on the open sea coast. The sites are usually situated on sandy barrens and the soil on the sites is without exception fine sand.

On smaller a scale the sites tend to be located either at the ends of capes or on straight beaches[5]. They are usually situated by restricted or open waters (i.e. width 200–1000 m or more) but nevertheless along the sheltered and restricted fjords and bays, the width of which rarely exceeds 1.5 km. Only one of the sites, Kuolemajärvi 5 Hatjalahti Tukikohta, is located by a very narrow strait. The direction of the sites varies between east, south and north-west, although some preference towards the south and the south-west is visible. The general direction is usually towards the nearest body of water. The background of the sites is in almost every case sheltered, often quite steep or at least clearly rising. The slopes at the sites are normally even or very gentle and usually the immediate shores in front of the sites are also relatively gentle. Still, a few sites are located also on top of steep and high banks (e.g. Pontiaho 1 C–D, Pontiaho 2 and Pontiaho 3).

When the function and nature of the sites are considered, the problem lies in the limited observations and few finds. One problem is the lack of excavated assemblages and e.g. osteological analyses. It can be assumed that sealing and fish-

Figure 10.11 The eastern side of the valley of Humaljoki River. Overview towards the area of Patamäki sites from south, from the direction of Pontiaho sites. (Photo: O. Seitsonen 2003)

ing, for which the locations of many of the sites are more than suitable, formed the basis of subsistence in the study area. In any case the role of these activities was substantial in the Stone Age subsistence elsewhere in the Karelian Isthmus and the Ladoga Karelia (see Seitsonen 2008, this volume). The location by the sea and the dominance of seal bone fragments in the osteological analyses from the Viipuri Häyrynmäki site (Seitsonen 2008, this volume.), c. 50 km north of the study area, further support this assumption.

In the current situation the only way to distinguish differences in the function and nature of the sites is through the comparison of the observed structures and the environment. There are only two sites where dwelling depressions have been found, namely the dwelling sites Kirkkohiidenhiekka 1 and Suurpelto. In both places also a clear cultural layer was observed and find material included ceramics. These sites can be assumed to have been so called extended activity sites, where multiple tasks were performed during extended periods of time (Kvamme 1985; see also Nordqvist & Lavento 2008, this volume; Seitsonen & Gerasimov 2008, this volume).

It is more difficult to define the character of the rest of the sites. If the existence of a cultural layer and ceramics are taken as indicators of activities of longer duration or recurrent activities, some of the sites fulfil these conditions. At Ilmatorjuntaleiri 1 two fire places as well as ceramics were found during the excavations in the 1930s. However, since no proper research report exists the presence of a cultural layer can only be presumed. During the survey a cultural layer and ceramics were observed at Pontiaho 1(A). Cultural layers were noted at Patamäki 1 and also at Patamäki 3 and Pontiaho 2. Ceramics were found at Ilmatorjuntaleiri 2. However, most of the sites seem to belong to the category of limited activity sites, i.e. special purpose sites of short duration of use, e.g. fishing and hunting camps (Kvamme 1985; see also Nordqvist & Lavento 2008, this volume; Seitsonen & Gerasimov 2008, this volume).

The dwelling sites Ilmatorjuntaleiri 1 and Ilmatorjuntaleiri 2 by Lake Kipinolanjärvi are situated in a sheltered location by a fresh water basin. However, they are also near another major ecological environment, the Gulf of Finland. Based on the observed fireplaces, ceramics and the size of the find areas the sites were probably more than just overnight stays, and at least the latter was used for prolonged periods or repeat-

edly. Thus these sites can be classified as extended activity sites.

Around Lake Kuolemajärvi the environment is different: here the sites are located in a more terrestrial environment along the steep shores of a large fjord. Based on the topography, its size and finds the Notko-ojansuu site can be classified as a short term camping or hunting site. The Tukikohta site located by a narrow strait in an open environment can also be labelled as a site for a particular purpose, perhaps fishing and hunting. Both sites should be regarded as limited activity sites.

In the River Humaljoki area the sites are situated by the sea in a sheltered bay or a strait environment (Fig. 10.11). The dwelling depressions at the Kirkkohiidenhiekka 1 and Suurpelto sites show that at least part of the habitation was prolonged in character. The location of the depression at the former site, away from the shore or by a small pond, deviates from the rest of the sites and requires further study in the future. Of the Pontiaho sites only Pontiaho 1 A shows evidence of more substantial human activities. The finds from the find areas Pontiaho 1 B–D and the sites Pontiaho 2–4 are few and consequently the character and date of the sites is not clear. It is not known if they are separate, successive limited activity sites or perhaps just contemporary activity areas of a vast extended activity site.

The same applies to the Patamäki sites. Patamäki 1 seems to be a large site but its inner patterning and chronology is obscure due to the few finds and destruction caused by the pipe line. Patamäki 2 is also badly destroyed and Patamäki 4 too scarce in finds and other data to make any detailed conclusions. Patamäki 3 might be some kind of extended activity site but because of the disturbances caused by the probable transgression as well as the small excavated area the interpretation remains dubious.

The dating of the sites is also problematic. There is datable find material only from six sites and therefore most often the only dating method is the shoreline displacement dating. Still, it seems that in the studied areas there is clear evidence of long settlement sequences; if not actually at the same sites, then at least at some adjacent locations. The utilization of these areas lasted for millennia, often quite intensively. In the Lake Kipinolanjärvi area are signs of at least Middle and Late Neolithic habitation, while in the Humaljoki area the sites date from the Mesolithic to the Early Metal Period.

If the archaeological material from Koivisto and Kuolemajärvi is compared with the data from the Johannes area, similarities emerge. Most of the traces of intensive habitation are located in sheltered locations by the sea, near the mouths and junctions of coastal and inland leading waterways. This is clearly the case with the most evident extended activity sites, i.e. the sites with dwelling depressions. In the Humaljoki area these include the sites Kirkkohiidenhiekka 1 and Suurpelto, and in Johannes the dwelling sites Johannes 13 Rokkala Mutala, Johannes 1 Rokkala Korvenkylä Tokarevo 1 and Johannes 14 Rokkala Mänty (Uino *et al.* 2003; Lisicyn 2003; Carpelan *et al.* 2008, this volume).

Deeper inland along the ancient fjords there are also signs of habitation as numerous stray finds are known from there. However, so far not many sites are known from the inland area. This evidently distorted image is caused by the concentration of research as the areas along these fjords have hardly been studied at all. The only better known site in this area, Uusikirkko Kaukjärvi Kelonen, actually includes multiperiod cultural deposits covering a sequence of periods starting possibly as early as the Early Neolithic and ending in the Late Neolithic (Europaeus 1926). In addition, both Europaeus

(1926) and Pälsi (1933) recorded remains of 'dwelling pits' that might indicate the presence of substantial dwellings. Based on the location, the finds and the bone material Europaeus (1926) interpreted the site as a repeatedly used winter fishing camp. From the present point of view, the site could also be interpreted as a frequently used extended activity site.

In the case of extended activity sites the locations at the border or junction of several ecological environments was preferred as different resources could be conveniently utilized at such locations. Such sites are often situated in logistically advantageous places also in another sense, namely near the meeting points of different travelling routes. Similar observations have also been made elsewhere in the Karelian Isthmus (e.g. Nordqvist & Lavento 2008, this volume; Seitsonen & Gerasimov 2008, this volume).

When comparisons are made with the other areas discussed in this publication, it has to be acknowledged that there are apparent differences in the overall geography and geology of these regions. The Kaukola, Räisälä and Kurkijoki study areas are situated by Lake Ladoga (Fi. Laatokka, Ru. Ladožskoe ozero), whereas Koivisto and Kuolemajärvi (as well as Johannes) are located by the Baltic Sea. In the eastern Karelian Isthmus areas of bedrock and eskers are essential features in the landscape and especially the more intensive habitation seems to have been closely connected to the latter. In Koivisto and Kuolemajärvi there are no significant eskers or areas of exposed bedrock.

Still, despite these differences, the areas have a lot in common. Lake Ladoga, even though being a lake is, due to its huge size, actually more comparable to a sea, and consequently its coasts are more like sea coasts than coastal areas by smaller inland lake systems. Also, the absence of eskers, which on the coast of Lake Ladoga provided suitable environments for habitation as well as for overland travel, is compensated by the presence of wide sandy barrens providing more or less similar circumstances on the coast of the Gulf of Finland.

Figure 10.12 K. Nordqvist documenting the excavation area at the possibly Mesolithic site of Koivisto 5 Humajoki Patamäki 3. Picture taken from west. (Photo: O. Seitsonen 2003)

That there are many similarities in the placing of the sites in these areas, partly tells about the general requirements and preferences in placing a dwelling site and also about the assumedly similar subsistence base or other similarities in the settlement pattern and social structure. Unfortunately the material from the coast of the Gulf of Finland is still too small and scanty for reliable comparisons concerning the similarities and dissimilarities in the Stone Age settlement between these areas.

At present the distribution of the dwelling sites in the study area tells mostly of the distribution of the archaeological activities and the targeting of the survey in May 2003 (Fig. 10.12). However, taking into consideration that the survey was carried out only for a very limited time, the amount of currently known sites shows the substantial presence of a Stone Age population in the area and reveals a high potential for future studies. The results indicate that some areas were intensively utilized throughout the Stone Age and also in the later times. De-

spite the fact that the dwelling site concentration in the Humaljoki area is a solitary phenomenon produced by archaeological fieldwork, similar clusters can without doubt be found also elsewhere as shown by the surveys conducted in other parts of the Karelian Isthmus. Based on the distribution of stray finds, the so far unstudied areas along the Rivers Työppölänjoki and Summanjoki as well as the shores of Lakes Kuolemajärvi and Hatjalahdenjärvi should bear more signs of Stone Age settlement. This assumption is further strengthened by the large amount of finds and sites along the same water route both in the Uusikirkko and Johannes municipalities.

10.6 Summary

In this paper the results of the archaeological fieldwork carried out in the former municipalities of Koivisto and Kuolemajärvi before World War II and in May 2003 are presented. Due to the short duration and limited spatial focus of the fieldwork, the view of the distribution and location of the Stone Age settlement is still badly biased and distorted. The current fieldwork concentrated near the shores of the Gulf of Finland, especially in the River Humaljoki and the Lake Kipinolanjärvi areas, which consequently are over-represented in the data. However, already these studies show that in the study area are both long term settlement sites of varying intensity as well as sites of limited utilization, dating from the Mesolithic to the Early Metal Period.

In the 2003 studies 14 dwelling sites and find locations were found and three of them were test excavated. Many of the sites yielded only quartz, but ceramics, both Typical Combed Ware and Late Neolithic ceramics, were found. Textile-impressed Ware was found at one site. Like the other surveys discussed in this publication, also the fieldwork in Koivisto and Kuolemajärvi revealed the first documented dwelling depressions in these areas. Also matters relating to hydrological history were taken into consideration. Observations of the shore formations were made at several places and one site possibly inundated by the Litorina transgression was test excavated.

The Stone Age settlement in Koivisto and Kuolemajärvi shows many similarities with other areas in the Karelian Isthmus. The locations of the sites are roughly similar to the adjacent Johannes area but also with regions by Lake Ladoga, e.g. Kaukola and Räisälä. Despite certain geological and other differences between these areas, the placing of the sites often shows such similarities, which apart from showing general requirements placed on the functional Stone Age locations, it also proves that the subsistence and settlement pattern, as well as the social structure of the communities, were possibly relatively similar.

The longer term habitation seems to have favoured sheltered places in the vicinity of several ecological zones within the reach of important transportation routes. The totally open sea coast seems to have been largely avoided and instead the mouth regions of fjords and coastal bay environments were preferred. In addition to the finds made in 2003, stray finds and the dwelling sites in the adjacent areas show that human habitation and activities took place along the fjord-like waterways leading inland. These routes also linked the habited areas of Koivisto and Kuolemajärvi to the ones in the Johannes and Uusikirkko municipalities.

The results and interpretations presented here are tentative. The number of known dwelling sites is so small, that even a short period of new fieldwork can easily change the whole picture. However, it has become clear that the areas

of Koivisto and Kuolemajärvi were everything but devoid of Stone Age activities. On the contrary, revealing this much new archaeological information during the relatively short period of fieldwork in 2003 provides evidence for the high research potential of these areas.

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Endnotes

1 Fieldwork in May 2003 was jointly directed by Russian archaeologists Stanislav V. Bel'skij, Dmitrij V. Gerasimov and Sergej N. Lisicyn (IIMK/RAN and Kunstkamera, St. Petersburg) and Finnish archaeologists Kerkko Nordqvist and Oula Seitsonen (University of Helsinki). Also prof. Mika Lavento of the University of Helsinki participated for a few days in the surveys.

2 All the datings of geological and hydrological events are given as calendar years and follow the ones given by Saarnisto (2008, this volume).

3 Later, in 2005, archaeologists from IIMK/RAN and Kunstkamera, St. Petersburg, conducted small-scale rescue excavations at the site, but made practically no finds (Lisicyn 2005). The site is apparently totally destroyed.

4 Later studies were conducted at the site in 2005 by archaeologists from IIMK/RAN and Kunstkamera, St. Petersburg. These excavations, although relatively large in area, uncovered also only very few finds (Lisicyn 2005).

5 For the principles and variables used in analyzing the environment, see Vikkula 1994: 173; Nordqvist & Lavento 2008, this volume; Seitsonen & Gerasimov 2008, this volume.