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Archaeology, identity, and change

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# TODAY I AM NOT THE ONE I WAS YESTERDAY: ARCHAEOLOGY, IDENTITY, AND CHANGE

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**Edited by Arvi Haak, Valter Lang & Mika Lavento**

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# Contents

## BASE 5: Archaeology today: Things to be changed

# ON THE IDENTITY OF PREHISTORIC LAKE DWELLERS IN LITHUANIA

**Giedrė Motuzaitė-Matuzevičiūtė**

Fortified hilltop settlements are a known phenomenon from prehistory, appearing in eastern Lithuania during the Late Bronze Age Brushed Pottery culture. Concomitant with hilltop sites, lake dwelling structures have now been identified as a new settlement type. This paper considers the role and place of the lake dwelling phenomenon among the dominant hilltop settlement type of the period. Emphasis is placed on the application of interdisciplinary scientific methods as a means to developing a discussion on the identity of prehistoric lake dwellers in Lithuania.

*Key words:* Bronze Age, Iron Age, east Lithuania, fortified hilltop sites, lake dwellings.

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## Introduction

The Bronze Age in Europe was marked by large changes in society (e.g. Kristiansen 2000; Harding 2000; Kristiansen & Larsson 2005). Both fortified hilltop sites and unfortified settlements are known to have existed in the Brushed Pottery culture during the Late Bronze and Early Iron Ages in Lithuania, which embraced roughly the eastern regions of the country (Grigalavičienė 1995). This period marked an increase in economic development and an intensification of farming (Brazaitis 2005, 303). Population growth, the need for protection of property, the appearance of iron artefacts, and a variety of other factors fostered the establishment of fortified settlement sites during the second half of the 2nd millennium BCE (Merkevičius 2005, 45–50). The fortified sites were usually established on the top of a hill and were often protected by the nearby presence of streams, rivers, or lakes. They constituted "multi-functional central places of power and wealth for the entire region, and had special functions: political-administrative, defence-related, economic (production and trade) and religious" (Merkevičius 2005, 46). It has been suggested that those fortified hilltop sites were probably inhabited by the chief and his family members (*ibid.*). Keeping in mind possible sampling and excavation biases, the discoveries of imported artefacts and evidence of bronze casting have only been reported from fortified hilltop sites (Grigalavičienė 1995, 102–107).

Lake-dwellings are a settlement type which consists of houses built on slightly elevated structures next to or above a water body, such as lake shoals, floodplains, or river mouths. This type of settlement is known to have existed in prehistoric Europe; one of the most prevalent sets of sites have been discovered around the Alps (e.g. Ruoff 1987; Keller 2008 (1866)). In Lithuania this phenomenon has been reported from the Stone Age (Girininkas

2005, 45), the later periods of the Bronze, and the first half of the Early Iron Ages (around 830–370 BCE). Such lake dwelling sites have been researched in Lithuania during the last decades (e.g. Menotti *et al.* 2005; Motuzaitė-Matuzevičiūtė 2002).

Presently, the researchers are focusing on the investigation of the Lake Luokesas I site (Baubonis *et al.* 2009; Pranckėnaitė *et al.* 2008). The remains of the site have been found underwater in Lake Luokesas, which is located in the Molėtai district of eastern Lithuania (see Fig. 1). The landscape morphology surrounding Lake Luokesas consists of undulating hills, with highlands (160–170 m height above the sea level) bulldozed by the last glacier and now covered with forests, while the lowlands around the lake are mainly swamps (Menotti *et al.* 2005, 384–385). The lake has also two forest-covered islands (Baubonis *et al.* 2001, 229). Lake Luokesas is connected with other lakes on its eastern and western edges, joined by small creeks. The Lake Luokesas I settlement remains are situated on a morainic ribbon-shaped shoal in the northern part of the lake, which stretches from the shore to one of the islands (see Fig. 2). The settlement itself is situated about 45–55 m from the shore, in a location where the shoal forms an outward bulge into the deeper portion of the lake (see Fig. 2). As mentioned earlier, the remains of the lake dwellings are underwater at 1.10–1.90 m

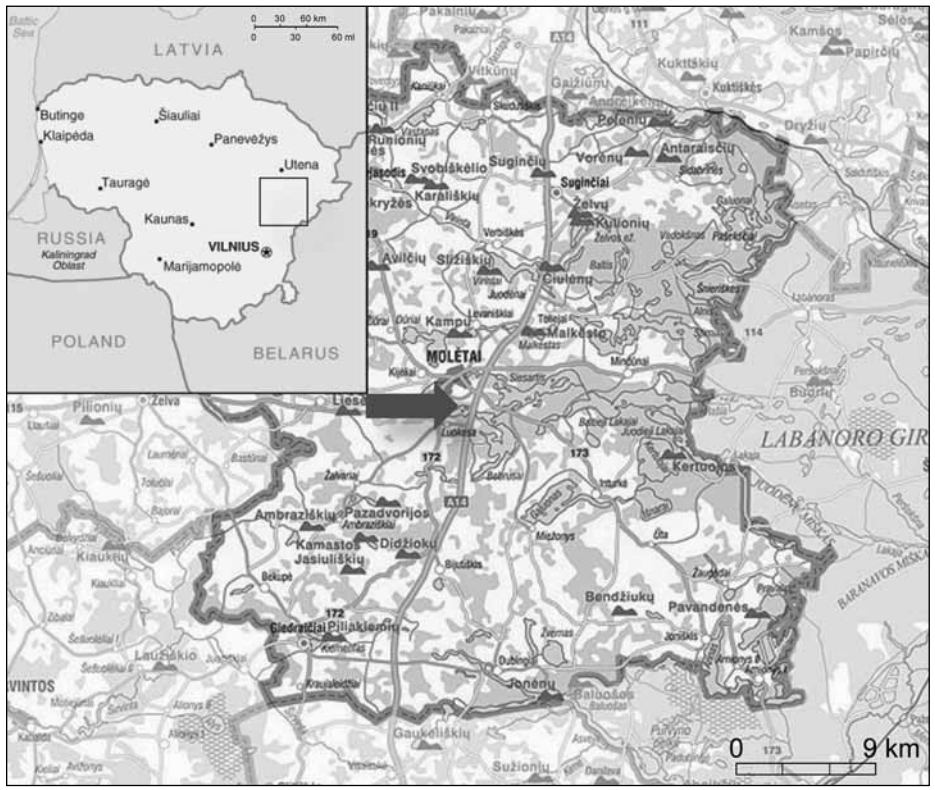


**Figure 1.** A map of Molėtai district and the locations of fortified hilltop sites (hill symbol) in the area. Map: Zabiela 2010. The research area is located on the map of modern Lithuania. Map: http://www.maps.lt. The arrow indicates the location of Lake Luokesas.





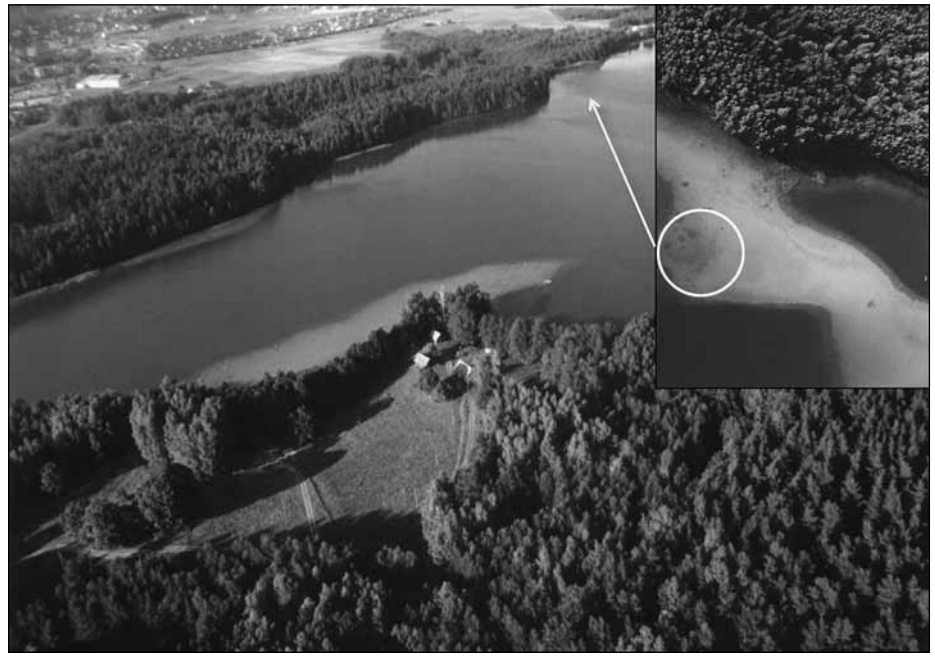

**Figure 2.** Lake Luokesas and the shoal of the settlement I (circled) in 2003. *Photos by Giedrė Motuzaitė-Matuzevičiūtė.*

in depth (Pranckėnaitė *et al.* 2008, 526). The cultural layer consists of acidic organic material incorporated into a basic (>7 pH) calcareous lake marl layer. In such an anaerobic environment low in bacterial activity a wide range of artefacts have been preserved, from bone and pottery to plant remains (Douterelo *et al.* 2009, 795). The excavations revealed vertically and horizontally distributed wooden building structures, a large quantity of Brushed Pottery type vessels and cups, birch baskets with hazel nuts, wooden spoons, a variety of wooden hammering tools, bone spearheads and harpoons, etc. (Baubonis *et al.* 2001; 2009; Pranckėnaitė *et al.* 2008). The site also contained precious bronze artefacts (Pranckėnaitė *et al.* 2008, 528).

The main questions asked in this paper are: what is the place of lake dwellers in the Late Bronze – Early Iron Age society in Lithuania, and can we connect the lake dwelling phenomenon with that of fortified hilltop sites?

## Setting the pace

The identity of a group of people or an individual is often defined via their relationship or interaction with others, and by defining how 'different' they are from each other. In other words, identity defines what is unique about the individual and about the group (Wells 1998, 242). Cohen (1994, 145) states that interaction with the natural environment or means of subsistence defines identity. Jones (1997, 87–105) attempts to understand identity via internal and external interaction between an individual's or group's *habitus*.

In order to approach answers to questions concerning the identity of Lake Dwellers in Lithuania, the author agrees with the view presented by Wells (2001,

17), which claims that "one means of approaching questions of identity that involves less of our own preconceptions and categorizations is to focus on what the people we are studying actually did – an archaeology of practice – rather than concentrating on types of objects and categories of wealth in graves". By studying the activities and subsistence strategies of lake dwellers in Lithuania and comparing them with those thought to be practised by occupants of fortified hilltop sites, we can approach the questions of lake dweller identity. The palaeoenvironmental situation, especially the past water level of Lake Luokesas, could have played a major role in the way people inhabiting lake dwellings identified themselves. The environment must have affected their dwelling building techniques, access to the settlement, and activities that were practiced at the site. Therefore, the lake dweller identity question must also been viewed via an environmental perspective.

## Applied methodology

Information about past human activities, cultural peculiarities and behaviour lies not only in the artefacts produced by humans, but also in the context from where these artefacts have been retrieved; as Orton (2000, 148) put it, "the answer lies in the soil". Applying a variety of scientific methods helps to strengthen our interpretations about the past and to tackle questions that usually are impossible to answer only from retrieved artefacts. The research methods listed below were applied to the Lake Luokesas I site, allowing the reconstruction of water level variation and human subsistence strategies at the site.

Besides archaeological excavations, radiocarbon dating, zooarchaeological analysis, dendrochonological investigations (Menotti *et al.* 2005), micromorphology, magnetic susceptibility, loss-on-ignition, particle size analysis, mollusc analysis, and archaeobotanical investigation of micro and macro plant remains were applied to the Luokesas I settlement by the author (Motuzaitė-Matuzevičiūtė 2007; 2008).

**Micromorphology** is the study of undisturbed material in thin section. It allows features of soil/sediment horizons, their structures and boundaries, as well as the context and formation of archaeological deposits to be examined under the microscope (Goldberg & Macphail 2003; Matthews 2005). Since the bulk of soil/sediment samples are observed *in situ* throughout the analysis of thin section slides, it provides archaeologists with an abundance of unique and reliable data to answer key archaeological questions about environmental changes, occupation sequences, uses of space, archaeological preservation, the nature of sediments, post-sedentary events, etc. (Matthews *et al.* 1997; French 2003). Soil micromorphology techniques were used in detecting Lake Luokesas palaeoenvironmental changes before, during, and after the lake dwelling occupation (Motuzaitė-Matuzevičiūtė 2008, 36–45).

**Magnetic susceptibility** reveals the level of concentration of ferromagnetic minerals within a sample (Allen & Macphail 1987). There are three main factors that can influence the level of magnetic susceptibility in a soil: parent material, pedogenic processes, and human activity (*ibid.*). Enhancement of the magnetic susceptibility signal may reflect sediment parent material. Magnetic susceptibility can vary with the sample type, quantity, particle size, and can correlate well with the presence of past human occupation (Thompson & Oldfield 1986; Ellwood *et al.* 1995). A magnetic susceptibility analysis was conducted at Lake Luokesas I site to reconstruct the sequence of fire episodes and intensification of human activity at the site (Motuzaitė-Matuzevičiūtė 2008, 38).

**Loss in weight on ignition** data is especially useful in conjunction with mineral magnetic values and particle results in helping to understand other readings and possible correlations among data (O'Connor & Evans 2005). The amount of water, organic material, carbon (charcoal), calcium carbonate, and silicates in the Lake Luokesas core samples, determined by loss in weight on ignition, have provided interesting results concerning the history of the lake sediment development due to natural or anthropogenic processes (Motuzaitė-Matuzevičiūtė 2008, 36).

**Particle size analysis** can provide valuable data about the sedentary sequence of the core sample: changes in sediment structure, density, and the impact of low/high energy flow (Orton 2000). Sediments that are finer grained silty clay indicate a deeper water level, whereas the sediments from the shallow side (littoral zone) are coarser (Wallace 1999). The investigations of the Lake Luokesas I cores provided information about variations in sediment particle size within the stratigraphy, indicating episodes of stratigraphy formation that varied between natural and anthropogenic in nature (Motuzaitė-Matuzevičiūtė 2008, 36–37).

Molluscan analysis was used to detect the ecology of the Luokesas I settlement shoal (Motuzaite Matuzeviciute 2008, 37). This research was conducted together with the wet sieving of plant remains for macrobotanical investigation (Motuzaitė-Matuzevičiūtė 2007, 123–136).

**Archaeobotany** is the study of plant remains from archaeological sites (e.g. Pearsall 2000, 1–3; Renfrew 1973, 1–6). Archaeobotanical investigations are often conducted at archaeological sites with the aim of investigating past ecology and human/plant interaction (plant management and consumption) (*ibid.*). The archaeobotanical investigation of macroplant remains, coupled with a pollen investigation at Lake Luokesas I site, provided implications concerning palaeoenvironmental conditions at the site and surrounding areas, wild plant food gathering, domesticated crop growing, processing stages and consumption (Motuzaitė-Matuzevičiūtė 2007, 123–136).

## Discussion

The archaeological investigation, woven together with scientific research methods presented above, enabled the construction of a narrative on past environmental conditions and human subsistence strategies at the site, as well as helping to answer the question whether the dwellers can be associated with the populations of nearby hilltop fortified settlements, or be treated as separate populations possessing their own identity.

Firstly, the reconnaissance of the Lake Luokesas I site has revealed a double palisade wall established for protecting the settlement on its coastal side (Baubonis *et al.* 2001, 230). Possession of such a feature in common with fortified hilltop sites fits with the general assumption that, due to a variety of circumstances appearing at the end of the Bronze Age, the inhabitants had to protect themselves and their property by constructing fortifications (Merkevičius 2005, 45–50).

The Lake Luokesas I settlement was occupied during the transition from the Subboreal to Subatlantic periods. These periods embrace the years of 3500/3000–500 BCE (Subboreal) and 500 BCE – present (Subatlantic) (Gaigalas & Dvareckas 2002, 413; Seibutis & Savukynienė 1998, 52). The Subboreal period in Lithuania is known to have been dry and cold (Kabailienė *et al.* 2009), with increasing cold and precipitation at the end of

the Subboreal (Gaigalas 2004, 243). The existence of a colder than present-day Subboreal climate has been indicated by the discovery of such plant remains as *Betula nana* (Dwarf birch), which probably grew in adjacent territories of the site (Motuzaitė-Matuzevičiūtė 2007).

The micromorphological investigations of thin section slides produced from the core samples taken from the Lake Luokesas site have shown that some organic material has been replaced with iron oxides. Evidence of plant decomposition and the presence of soil mites, earthworm activity, and ash lenses of *in situ* burning of the organic peaty horizon have been detected. The highest abundance of fresh water mollusc species was discovered in the top and bottom layers of the core, but almost none in the anthropogenic horizons. These features serve as strong indictors about the oxygen rich conditions at different episodes of occupation, and the past exposure of the shoal surface to the open air. Having such evidence in hand, it can then be speculated that the lake dwelling inhabitants did not have to build their houses above water and live in a totally different manner as the populations on dry land, narrowing the gap of 'difference' between those populations. Nevertheless, a micromorphology study, as well as particle size analysis, and a presence of wetland plant species have indicated the existence of moist conditions at the site, including periodical site inundation events and human attempts to strengthen the island by bringing additional morainic rubble and sand to the site (Motuzaitė-Matuzevičiūtė 2008), similar, for example, to Scottish crannogs.

So far a very small portion of the Lake Luokesas sediments has been analysed for plant remains; nevertheless, these analyses have revealed an important discovery connected with human diet and activities at the site. Archaeobotanical investigations of the Lake Luokesas site have identified a range of edible wild and domestic plants that were probably consumed by humans, and their stock at the lake dwelling site (Motuzaitė-Matuzevičiūtė 2007). Up to date cereal pollen, arable weeds, emmer wheat (*Triticum dicoccum*) cereal grains, and chaff have been identified (*ibid.*). Taking into account the exceptional preservation conditions for plant remains at Lake Luokesas dwelling site, one can expect a much wider spectrum of edible wild and domestic plant species that remain to be identified in the future. The archaeobotanical investigations of macro plant remains as well as stable isotope analysis of human bone from the Late Bronze Age site of Turlojiškės (south Lithuania) have shown that common millet (*Panicum miliaceum*) was widely cultivated and consumed plant during this period (Antanaitis *et al.* 2000; Antanaitis & Ogrinc 2000; Antanaitis-Jacobs *et al.* 2001).

The presence of cereal pollen at the Lake Luokesas I site implies the existence of an agricultural field adjacent to the site or/and crop processing of hulled wheat spikelets (Motuzaitė-Matuzevičiūtė 2007) during which the pollen grains were released (Out 2009, 189). Studies of modern pollen samples have shown that cereal-type pollen grains travel a very short distance from their host plants, in comparison to the pollen of other plants. There have been quite a few experiments performed which demonstrate that cereal pollen disperses very close to their parent plants, and that the number of cereal pollen decreases very rapidly within a short distance from agricultural areas (D'Souza 1970; Gatford *et al.* 2006).

According to Hillman (1981), Stevens (2003), and Harvey *et al.* (2006), the presence of cereal parts and weeds reflects different stages of crop processing and helps to identify and separate arable 'producers' (who grew their own crops) from 'consumers' (who did not grow crops but received them via trade). Both threshing waste and grains of hulled wheat were found at the site, showing that crops were not only consumed but also grown and stored at the lake dwelling site and processed for their final grain-glume separation (see Fig. 3). This material agrees well with the presence of cereal grinding tools at the site (Baubonis *et al.* 2001, 231).

By possessing such data, it can be inferred that the Lake Luokesas I site was chosen for a variety of reasons. The first

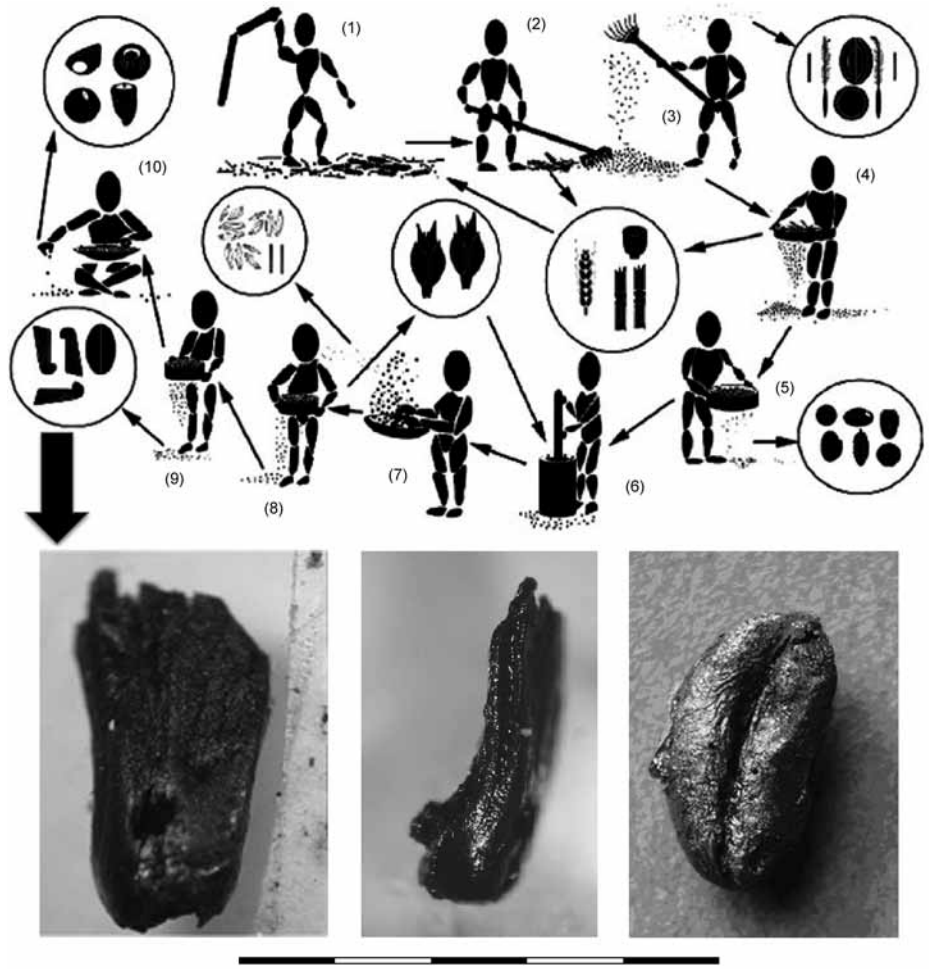


**Figure 3.** Processing stages for hulled wheats. 1 – threshing, 2 – raking, 3 – winnowing: light weed seeds, some awns removed, 4 – coarse sieving: weed seed heads, unbroken ears, straw fragments removed, unbroken ears re-threshed, 5 – first fine sieving: small weed seeds and awns removed, 6 – pounding, 7 – second winnowing: paleas, lemmas, and some awns removed, 8 – sieving with medium-coarse sieve: spikelet forks and unbroken spikelets re-pounded, 9 – second fine sieving: glume bases, awns, remaining small weed seeds, tail grain, and awns removed, 10 – hand sorting: removal of grain-sized weeds by hand. After Stevens (2003, 63). Below: the waterlogged glume bases (left and middle) and charred grain (right) of emmer wheat (*Triticum dicoccum*) from Luokesas I lake dwelling site reflecting the final stages of crop processing. *Photo by Giedrė Motuzaitė-Matuzevičiūtė.*

and major reason that drove people to live in this water-surrounded environment is safety. This can be clearly seen by the need for the double palisade wall for protection (Baubonis *et al.* 2001, 231). The other reason to live in an environment surrounded by water could have been to reduce the risk of fire hazard, which might have been a big problem when living in an area surrounded by forest where slash and burn agriculture took place (Motuzaitė-Matuzevičiūtė 2008). A high rise in charcoal particles detected in pollen core sections dated to 1300–300 BCE suggests that fire was repeatedly used as a tool in landscape management, mainly to clear forest for agricultural practices (Gaigalas 2004, 249–250). As we can see from the Lake Luokesas I case study, the lowland territories around the lakes were advantageously exploited for pasture and agriculture, and therefore the settlement site might have been constructed on the island to economize the use of land. Living next to water provided access to fresh water food resources; the evidence of its exploitation, such as fish bones, have been found at the site (Menotti 2010). The good accessibility and waterway network also benefited trade and exchange. Exotic pottery fragments, found in a contemporaneous site across the lake (Menotti *et al.* 2005, 390) and bronze artefacts (Pranckėnaitė *et al.* 2008, 528) show the existence of long distance trading or exchange among the inhabitants of Lake Luokesas.

## Conclusions

Only a very small area of the Lake Luokesas I dwellings has been investigated so far, but presently we can see a close resemblance between the functions of lake dwellings and hilltop sites (food foraging, production, consumption, storage, protection, trade). Some aspects of material culture also reveal close similarities between these two settlement types (same pottery types, grinding stones, presence of bronze artefacts, etc.). Such similarities imply a close relationship between these two settlement types, or even their occupation by the same population. Therefore, the lake dwelling inhabitants cannot be separated from the other contemporaneous populations of the fortified hilltop settlements. In an approximately 15 km radius are around seven known hilltop-fortified sites, some having Bronze Age occupation horizons (Zabiela 2010, fig. 1). The hill-top site dwellers together with the lake dwellers were all probably part of a fortified settlement network. Accurate seasonality studies have not been satisfactory conducted, but it can be speculated that hilltop inhabitants could have occupied the Lake Luokesas I site seasonally as a farmstead and food production site. The lake dwelling research is still under way which will bring possibilities to answer a much wider range of questions as the research unfolds.





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