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Wetland deposit in the hinterland: Kihliä flint find assemblage (southeast Finland) in the framework of hunter–fisher–gatherer ritual practices in northeastern Europe in the early 4th millennium BC

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More than a century ago, a collection of flint artefacts dating to the early 4th millennium BC was discovered in Kihliä, SE Finland. In this paper, we revisit the Kihliä assemblage by reconstructing the original findspot and examining its environmental context during the suggested time of deposition. As a result, we suggest that the Kihliä artefacts were deposited in a wetland area situated in a forested hinterland, distant from known Stone Age settlement sites in the region. By placing the Kihliä assemblage within the broader context of early 4th millennium BC ritual depositional practices in northeastern Europe and by comparing these practices to those from preceding periods in the surrounding regions of Finland, we propose that the Kihliä deposit was likely a ritually marked deposit. Remarkably, landscape-wise, the Kihliä deposit differs from other ritual deposits or sites from the same period in Finland, which are typically found in shore-bound locations. Consequently, this study suggests that small inland water bodies or wetlands, as well as water routes leading into the hinterland, could also serve as significant locations for ritual activities.

Keywords: depositional acts; hunter–fisher–gatherers; Neolithic; wet contexts; hinterlands; Finland.

Introduction

Water is a fundamental element in many ritual practices and conceptions of the cosmos in several religions worldwide[1]. Water often functions as a boundary between the sacred and the profane; consequently, many ritual practices of the past and present, such as baptisms and sacralizing, are performed with or in water[2]. Aside from world religions, the material remains of suggested ritualised actions in underwater and wetland archaeological contexts are also known from prehistoric Europe, where artefacts, deposits, and assemblages of various types and materials have been recorded from the Mesolithic onwards[3]. For example, deposits of heat-treated Mesolithic lithics have been collected from Bath Hot Spring, the only genuine natural hot spring in Ireland[4], whereas human and animal remains, as well as lithic, osseous and wooden tools, have been discovered at the bottom of a former lake at the Mesolithic site of Kanaljorden in Sweden[5]. Remarkably, the Kanaljorden artefacts were discovered as deposited on artificial stone packing in shallow water, and at least two human crania were likely mounted on

1 Terje Oestigaard, *Water and World Religions* (Bergen: SFU & SMR, 2005).

2 e.g., Juha Pentikäinen, *Suomalaisen lähtö. Kirjoituksia pohjoisesta kuolemankulttuurista* (Helsinki: Finnish Literature Society, 1990); Antti Lahelma, *A Touch of Red. Archaeological and Ethnographic Approaches to Interpreting Finnish Rock Paintings*. Iskos 15 (Helsinki: The Finnish Antiquarian Society, 2008); Terje Oestigaard, "Water," in *The Oxford Handbook of the Archaeology of Ritual and Religion*, ed. Timothy Insoll (Oxford: Oxford University Press, 2012), https://doi.org/10.1093/oxfordhb/9780199232444.013.0004; Kerkko Nordqvist, Vesa-Pekka Herva and Sarita Sandell, "Water and Cosmology in the Stone Age of Northeastern Europe," *Archaeology, Ethnology & Anthropology of Eurasia* 47, no.1 (2019): 23–32, https://doi.org/10.17746/1563-0110.2019.47.1.023-032

3 e.g., Richard Bradley, An Archaeology of Natural Places (London: Routledge, 2000); David Fontijn, *Sacrificial landscapes. Cultural biographies of persons, objects and 'natural' places in the Bronze Age of the Southern Netherlands, c. 2300-600 BC* (Leiden: Sidestone Press, 2013); Adomas Butrimas, "From Mesolithic to Early Christianity: The Development of the Ritual Complex in the Northern Part of Lake Biržulis (Lithuania) According to Archaeological, Linguistic and Historical Research," *Sociology and Anthropology* 5, no. 3 (2017): 204–219, https://doi.org/10.13189/sa.2017.050304; Edward Blinkhorn and Aimée Little, "Being Ritual in Mesolithic Britain and Ireland: Identifying Ritual Behaviour Within an Ephemeral Material Record," *Journal of World Prehistory* 31 (2018): 403–420, https://doi.org/10.1007/s10963-018-9120-4

4 Ian Brooks. "The flints," in *Archaeology in Bath: Excavations at the New Royal Baths (the Spa) and Bellott's Hospital 1998–1999*, ed. Peter Davenport, David Jordan, and Cynthia Poole (Oxford: Oxford Archaeology, 2007)

5 Sara Gummesson, Fredrik Hallgren and Anna Kjellström, "Keep your head high: skulls on stakes and cranial trauma in Mesolithic Sweden," *Antiquity* 92, no. 361 (2018): 74–90, https://doi.org/10.15184/aqy.2017.210

wooden stakes, suggesting that complex rituals took place at this aquatic location[6]. Although the reason why this particular lake was used in these practices is unknown, the Bath Hot Spring and its constantly hot water likely made the place special for the Mesolithic groups[7]. As Bradley[8] suggested, such anomalous natural places in the landscape often assume a sacred character and, accordingly, act as locations of votive deposits, rock art, and even production sites. Indeed, it is often through these archaeological remains that the importance of unaltered natural landscapes can be recognised.

Despite the common occurrence of structured or intentional deposits in waterways, wetlands, and other habitats, and their meaning to the research of prehistoric considerations of the cosmos, the phenomenon is not well known in Mesolithic–Neolithic Finland. Indeed, even though Finland is known as 'the land of a thousand lakes', only a handful of confirmed cases exist where artefacts with a Stone Age date have been collected from wet contexts exist, even though 'water offerings' from the Stone Age and Bronze Age in Finland have been referred to in the literature for several decades[9]. Some of these cases involve durable materials, such as stone axes or adzes discovered in rapids[10]. Although dozens of axes might have been collected from a single rapid, there is uncertainty regarding the timing of their placement in wet contexts because these artefacts (as well as rapids themselves[11]) are also known to have been utilised in vernacular ritual practices during later periods[12]. However, the grey literature (e.g., fieldwork reports, archives

6 Fredrik Hallgren, "Mesolithic skull depositions at Kanaljorden, Motala, Sweden," *Current Swedish Archaeology* 19 (2011): 244–246.

7 Ian Brooks, "The flints," in *Archaeology in Bath: Excavations at the New Royal Baths (the Spa) and Bellott's Hospital 1998–1999*, ed. Peter Davenport, David Jordan and Cynthia Poole (Oxford: Oxford Archaeology, 2007).

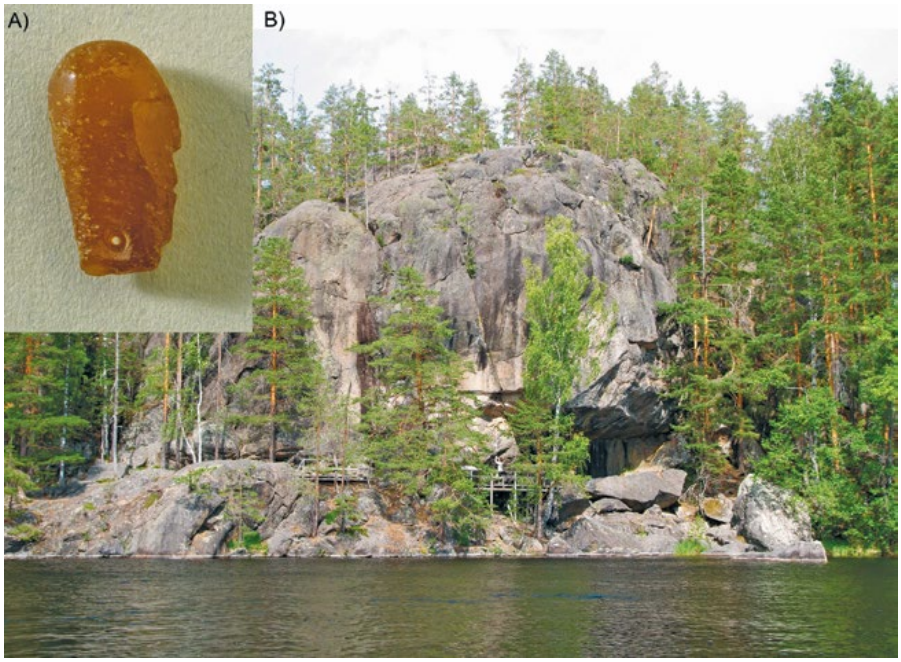
8 Bradley, *An archaeology of natural places*.

9 Ari Siiriäinen, "Bromarv and Luopioinen: two early Bronze Age finds from Finland," *Fennoscandia archaeologica*, I (1984): 51–57; Torsten Edgren, "Lans och yxa: kring trenne nya metallföremål från Finlands bronsålder," *Finskt Museum*, 1979 (1981): 17–32.

10 Matti Huurre, *Kivikauden Suomi*. 2nd edition (Otava, 2001).

11 Anna-Leena Siikala, *Mythic Images and Shamanism. A Perspective on Kalevala Poetry* (Vammala: Academia Scientarium Fennica, 2002).

12 Liisa Kunnas-Pusa, "Tärvellyt ja kaaputetut – Kivikautiset irtolöydöt Jaakkiman pitäjästä ja kivikautisten esineiden keräily 1800-1900 lukujen vaihteessa," *Muinaistutkija* 4 (2016): 2–7; Sonja Hukantaival, "Ukonvaajojen monet kasvot – Luokittelu- ja tulkintakysymyksiä," in *Puukenkien kopinaa: Henrik Asplundin juhlakirja*, ed. Janne Harjula, Visa Immonen and Juha Ruohonen (Turku: University of Turku, 2019).

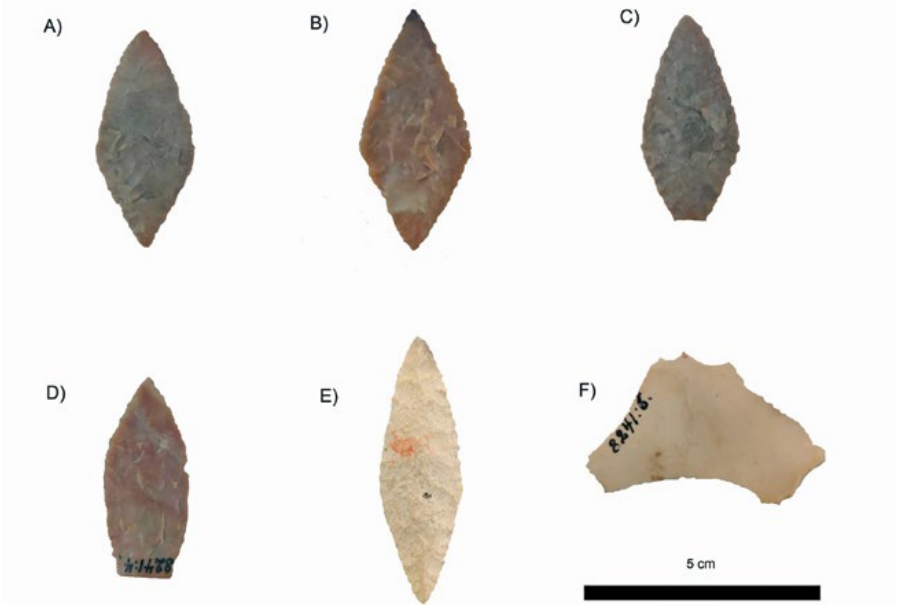


1. A) An anthropomorphic amber pendant (KM 25771:1) discovered in the water in front of the Astuvansalmi rock art cliff (eastern Finland). Photo: R. Bäckman 1990/Finnish Heritage Agency; B) The anthropomorphic rock art cliff of Astuvansalmi, photo by K. Lassila

A) Antropomorfinis gintarinis kabutis (KM 25771:1), aptiktas vandenyje priešais Astuvansalmi uolų meno klifą (Rytų Suomija). Nuotrauka: R. Bäckman 1990/Suomijos paveldo agentūra; B) Astuvansalmi uolų meno antropomorfinė uola, K. Lassila nuotrauka

and collection notes) contains dozens of notes about Stone Age finds or their concentrations, topographically located in a findspot that was underwater or in a wetland during the Stone Age. They have usually been interpreted as having been accidentally 'lost' or moved and redeposited by wave erosion, ice packs or run-off from drylands into nearby watercourses or wetlands. However, some may actually represent intended deposits. Additionally, the majority of wetland archaeological stray find locations, which consist mainly of organic materials (e.g., skis, paddles, sledge runners or fishing structures), have not been adequately studied, although several of the older 'bog finds' have later yielded prehistoric radiocarbon dates[13]. However, some of

13 Heikki Matiskainen, "Discrepancies in Deglaciation Chronology and the Appearance of Man in Finland," *Acta Archaeologica Lundensia* 8 (1996): 251–262; Timo Kuokkanen, "Stone Age sledges of central- grooved type: Finnish reconstructions," *Fennoscandia archaeologica* XVI (2000): 37–56.



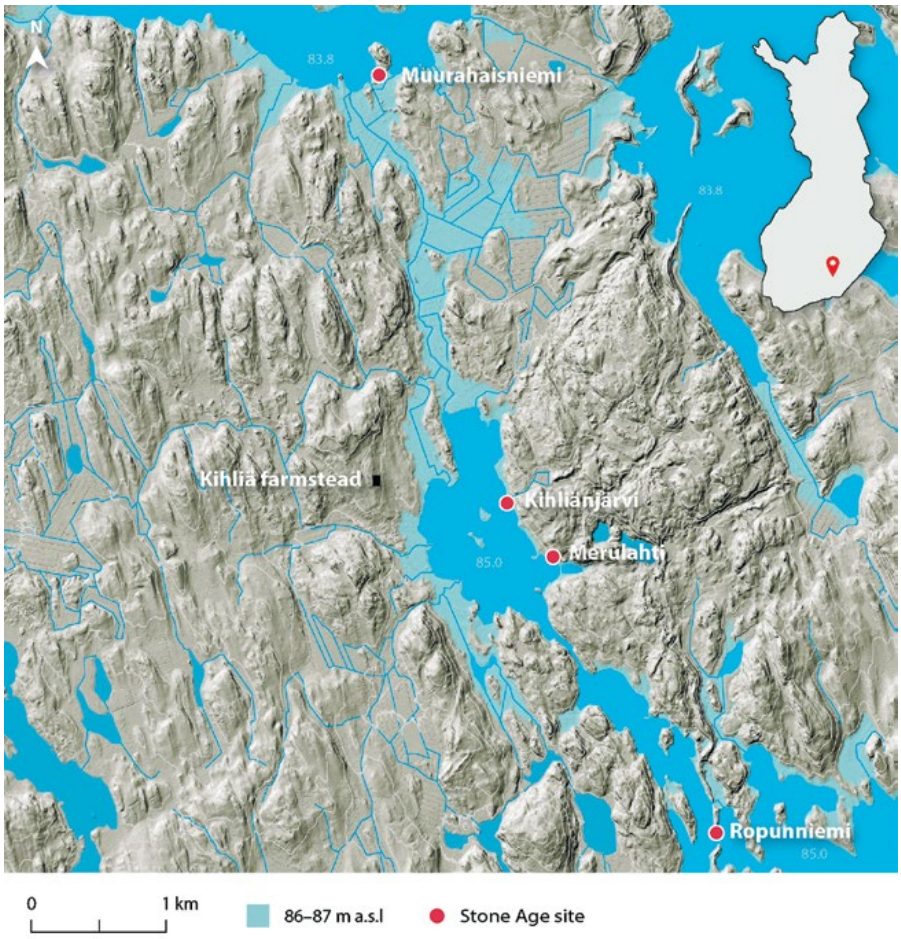
2. The Kihliä flint assemblage: A) KM 8241:1; B) KM 8241:2; C) KM 8241:3; D) KM 8241:4; E) KM 8241:5; F) KM 8241:6, photo by M. Ahola

Kihliä ttnago radinių rinkinys: A) KM 8241:1; B) KM 8241:2; C) KM 8241:3; D) KM 8241:4; E) KM 8241:5; F) KM 8241:6, Marja Ahola nuotrauka

the stray finds may contain archaeological layers, features, and structures that were simply not exposed and observed during their sudden recovery, or some may represent intentional depositions in wet places rather than lost materials in bogs and ancient waterways. One more secure example comes from the Astuvansalmi rock art site (eastern Finland), where four amber pendants, typologically dated to the 4th millennium BC[14], were discovered underwater in front of the rock art cliff[15]. Remarkably, some of these pendants were anthropomorphic in shape, likely mimicking the human-faced cliff on which the rock art was painted [Fig. 1]. This suggests that the presence of the pendants is not accidental but rather intentional behaviour related to the activities that the Neolithic hunter–fisher–gatherer communities conducted at the site.

14 Lahelma, *A Touch of Red*, 39-40.

15 Juhani Grönhagen, "Ristiinan Astuvansalmi, muinainen kulttipaikkako?," *Suomen Museo* 101 (1994): 5–18.



3. Ancient landscape reconstruction of Lake Kihliänjärvi, including known settlement sites dating to the Stone Age, map by M. Holappa

Kihliänjärvi ežero senovinio kraštovaizdžio rekonstrukcija, su pažymėtomis žinomomis akmens amžiaus gyvenvietėmis, M. Holappa žemėlapis

Although amber depositions have not been discovered in association with other rock art sites, the presence of the practice in 4th millennium BC Finland suggests that intentional deposits in wet contexts were part of the ritualised actions of the period. In other words, when digging deeper into the material record of the period in question, we might find further examples of this tradition. Taking this idea as our point of departure,

in this paper, we explore the topic of intentional deposits in wet contexts from the perspective of a unique flint assemblage [Fig. 2] dating to the early 4th millennium BC[16]. The assemblage was discovered in the village of Kihliä in Mäntyharju municipality, southeastern Finland, in the early 1920s [Fig. 3]. The artefacts, deposited in a tight cluster, were unearthed from a depth of half a metre in peat while a drainage ditch was dug into a mire to allow agriculture. According to the find catalogue of the National Museum (KM 8241:1–6), further flint points were discovered in the same spot; unfortunately, these points were lost before the find was given to the collections of the National Museum. Because no other finds or archaeological horizons have been reported at the spot, the find has been classified as a stray find and interpreted as 'a possible cache of a flint trader'[17].

In this work, we revisit the Kihliä flint assemblage and evaluate and conceptualise it in light of hunter–fisher–gatherer depositional practices in northeastern Europe in the early 4th millennium BC. By considering the findspot and its environmental context during the presumed time of deposition and exploring the findings in light of the known ritual practices of the period in the northern European context, we aim to (1) understand in what kind of contextual setting the finds were deposited and (2) determine whether the assemblage could be understood as an intentional deposit in a wet context. To provide an overview and broader context of the phenomenon in Stone Age Finland, we also present a few examples of potential deposits in wet contexts dating from the Late Mesolithic to the Final Neolithic (c. 6800–1500 cal BC) known in Finland.

Putting the Kihliä assemblage in place and context

REVISITING THE KIHLIÄ FIND

The Kihliä assemblage consists of six flint bifaces and one retouched flake [Fig. 2]. Although two items are fragmented either from the tip or the stem [Fig. 2: C and D], all the artefacts are in pristine condition, with sharp edges. The bifaces are either oval or rhomboid in shape and typologically

16 Matti Huurre, *Piityypin nuolenkärjet Suomen kivikaudella* (Helsinki: University of Helsinki, 1960).

17 Pirkko-Liisa Lehtosalo-Hilander, "Esihistorian vuosituhannet Savon alueella," in *Savon historia* 1, ed. Pirkko-Liisa Lehtosalo-Hilander and Kauko Pirinen (Kustannuskiila, 1988); Huurre, *Kivikauden Suomi*, 234.

date to the early 4th millennium BC[18], corresponding to the Typical Comb Ware culture (c. 3900–3500 BC; henceforth TCW). Since flint or other flint-like materials do not naturally occur in Finland, except for tiny loose pebbles, all prehistoric flint represents imported material derived from several different sources[19]. Indeed, during the early 4th millennium BC, an extensive artefact and material circulation system existed among the hunter–fisher–gatherer communities of the European boreal zone[20]. In addition to flint, other colourful or nonlocal raw materials, such as amber, copper, and slate, were transported, circulated, and exchanged over distances exceeding 1500 km from their points of origin. As flint bifaces appeared in the Finnish archaeological record during this period, it is likely that flint was circulated both as finished artefacts and as raw material nodules[21]. As Manninen and colleagues[22] have noted, technological knowledge of biface production was also likely transmitted through artefacts, though this novel

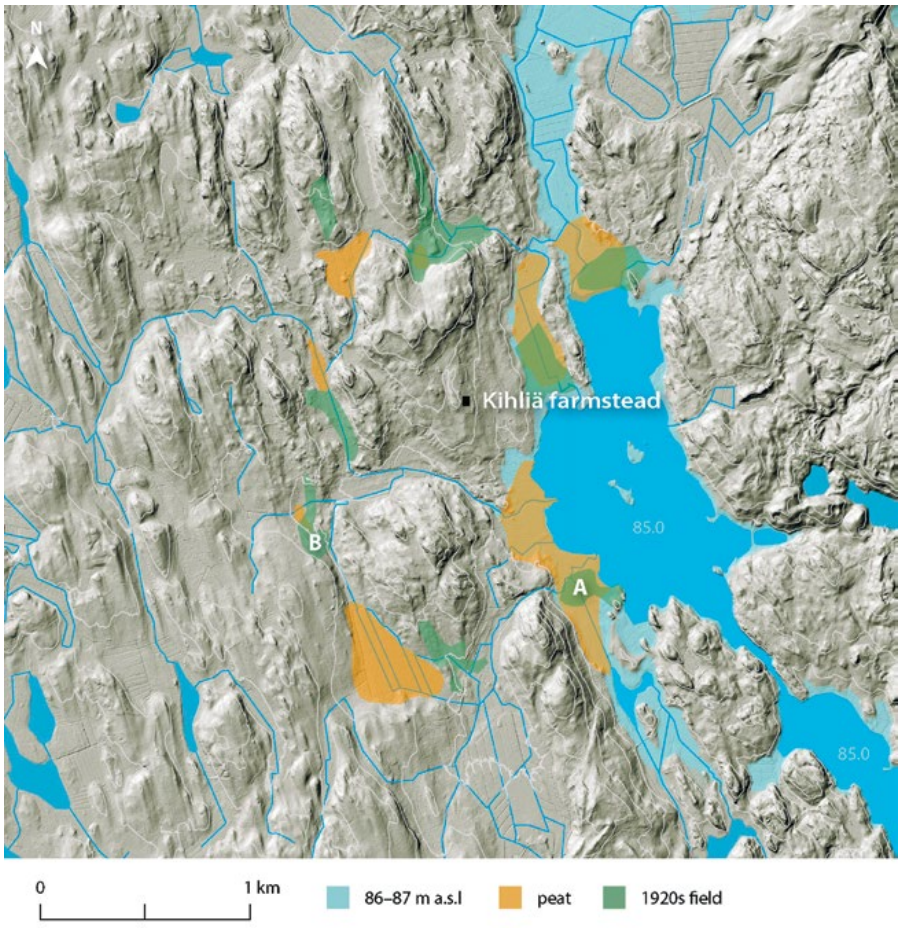
18 Huurre, "Piityypin nuolenkärjet Suomen kivikaudella."

19 e.g., Julius Ailio, *Die Steinlichen Wohnplatzfunde in Finland I* (Helsingfors: Akademische Buchhandlung, 1909); J. H. T. Vuorinen, *Piikivi ja Suomen kampakeraaminen piikauppa* (Helsinki: University of Helsinki, 1982); Mikael A. Manninen, Miikka Tallavaara and Esa Hertell, "Subneolithic Bifaces and Flint Assemblages in Finland – Outlining the History of Research and Future Questions," in *Uniting Sea. Stone Age Societies in the Baltic Sea Region*, ed. Christoffer Samuelsson and Niklas Ytterberg. Occasional Papers in Archaeology 33 (Uppsala: Institutionen för arkeologi och antik historia, 2003).

20 e.g., Torsten Edgren, "Kivikausi," in *Suomen historia I*, ed. Yrjö Blomstedt (Weilin+Göös, 1984); Vesa-Pekka Herva, Kerkko Nordqvist, Antti Lahelma and Janne Ikäheimo, "Cultivation of Perception and the Emergence of the Neolithic World," *Norwegian Archaeological Review* 47, no. 2 (2018): 141–160, https://doi.org/10.1080/00293652.2014.950600; Aivar Kriiska, "Foreign materials and artefacts in the 4th and 3rd millennia BCE Estonian Comb Ware Complex," in *When gods spoke: Researches and reflections on religious phenomena and artefacts. Studia in honorem Tarmo Kulmar*, ed. Peeter Espak (Tartu: Tartu University Press, 2015); Alexey Tarasov and Kerkko Nordqvist, "Made for exchange: the Russian Karelian lithic industry and hunter-fisher-gatherer exchange networks in prehistoric north-eastern Europe," *Antiquity* 96, no. 385 (2022): 34–50, https://doi.org/10.15184/aqy.2021.133; Marja Ahola, Elisabeth Holmqvist and Petro Pesonen, "Materialising the Social Relationships of Hunter-Gatherers: Archaeological and Geochemical Analyses of 4th Millennium BC 'Slate Ring Ornaments' from Finland," *Journal of Archaeological Method and Theory* 29 (2022): 1259–1293, https://doi.org/10.1007/s10816-022-09556-8; Kerkko Nordqvist, "The Late Stone Age (Late Mesolithic and Neolithic) in the Western Forest Zone, 7th–3rd Millennium BCE," in *Encyclopedia of Archaeology, 2nd Edition*, ed. Efthymia Nikita and Thilo Rehren (Academic Press, 2024), https://doi.org/10.1016/B978-0-323-90799-6.00240-8

21 Manninen, Tallavaara and Hertell, "Subneolithic Bifaces."

22 Ibid, 174.



4. Kihliä farm, showing 1920s fields and modern peatlands, map by M. Holappa

Kihliä ferma, kur matyti 1920 m. laukai ir šiuolaikiniai durpynai, M. Holappa žemėlapis

technology did not necessarily require the relocation of skilled instructors. However, recent aDNA studies have linked the emergence of TCW to population movements[23].

Since the Kihliä find assemblage was discovered more than 100 years ago, the record of the location of the findspot is vague, as is the case with several similar stray finds from that time, making precise location

23 Eppie R. Jones, Gunita Zariņa, Vyacheslav Moiseyev, Emma Lightfoot, Philip R. Nigst, Andrea Manica, et al., "The Neolithic Transition in the Baltic was not Driven by Admixture with Early European Farmers," *Current Biology* 27 (2017): 576–582, https://doi.org/10.1016/j.cub.2016.12.060

estimates difficult. However, according to notes in the find catalogue, the artefacts were discovered 'approximately one kilometre from the Kihliä house, almost in the middle of a cultivated peatland field approximately one and a half hectares in size'. Therefore, to estimate some of the most potential findspots, we analysed historical maps[24] to pinpoint such locations of the same size located approximately one kilometre from the Kihliä farmstead. As the catalogue indicated that the field was in a drained mire, we also used soil maps[25] to locate peatlands within the area of interest.

Our analysis revealed eight old cultivated plots on a historical map from the 1920s, all situated approximately one kilometre from the Kihliä farmstead [Fig. 4]. Of these, three were directly on the shore of Lake Kihliänjärvi, while the rest were farther inland. In terms of size, the fields located southeast and southwest [Fig. 4: A and B] were approximately one and a half hectares, respectively, corresponding to the description of the specific location. As these two fields were also located on peatlands, they were likely drained mire habitats.

Given the vague notes of the findspot in the catalogue, some consideration of the environmental background of the study area is needed. The elongated, clear-watered route lakes that traverse the Mäntyharju area have formed within bedrock fractures, with Lake Kihliänjärvi (321 ha) being one of them[26]. The dominant wetlands in the study area are small mires that formed on the lakeshore and in the depressions in the terrain, most of which were systematically drained in the 20th century to expand agricultural land. However, many peatlands adjacent to lakes in the Mäntyharju region developed later due to the artificial lowering of lake levels in the 19th and 20th centuries CE, a common historical practice in Finland aimed at increasing farmland.

Lake Kihliänjärvi lies between the ancient lakes of Saimaa and Päijänne, though its water level history has not yet been studied in detail[27]. However, as an elongated lake, it was likely transgressive, similar to Lake

24 https://vanhatkartat.fi

25 https://gtkdata.gtk.fi/maankamara

26 Julia Hämäläinen, *Mäntyharjun luonto ja arvokkaat luontokohteet* (Kopijyvä Oy: Mikkelin kaupungin julkaisuja, 2009).

27 Antti Bilund, *Mäntyharjun Vanosen rantaosayleiskaava-alueen arkeologinen inventointi 2006*. Survey report (Savonlinna Museum, 2006).

Saimaa and other nearby lakes during the Mesolithic and Early Neolithic, an idea supported by archaeological excavations at nearby sites[28]. In Finland, isostatic land uplift is stronger in the northwest than in the southeast, causing the waters of elongated lakes to be pushed southward, leading to the creation of new outflow channels and sudden drops in water levels[29]. One such outflow channel between ancient lakes of Saimaa and Päijänne crossed this intermediate zone, where Mäntyharju is located, approximately 6000–5500 years ago[30]. This passage also has great archaeological significance as a natural gateway for people and the spread of artefacts and cultural traditions.

No systematic archaeological surveys have been conducted in the municipality of Mäntyharju, and the Kihliä findspot has never been inspected (or evaluated) by archaeologists. During the Neolithic, the water level of Lake Kihliänjärvi was likely several meters higher than today, especially after the lower stages of the Mesolithic, following the historical water level regulation. If the flint artefacts had been placed in the open lakeshore waters, i.e., the currently drained lakeshore mire [see Fig. 4A], they probably would not have remained in a tight cluster but instead dispersed over a wider area. In addition, the edges would likely have been rounded while lying in water, and the artefacts would not be in such a pristine state. Additionally, it may be presumed that the notes in the find catalogue would have mentioned that they were found in the lakeshore. Thus, it seems more likely that they were found somewhere in more inland peatlands [see Fig. 4B and its surroundings], where mires formed in natural depressions or along smaller streams and brooks that still traverse the area. However, note in the catalogue that 'the artefacts were found about half a metre deep in peat' suggests that they were most likely deposited in an already peat-producing environment—a wetland.

28 Petro Pesonen, *Mäntyharju Muurahaisniemen koekaivausraportti*. Research report (Finnish Heritage Agency, 2007).

29 Hannu Pajunen, "Ala-Saimaan sedimentaatioympäristön muuttuminen jääkauden jälkeen," *Terra* 117, no. 1 (2004): 33–46; Martti Saarnisto, *The Late Weichselian and Flandrian History of the Saimaa Lake Complex* (Helsinki: Societas Scientiarum Fennica, 1970).

30 Ari Siiriäinen, "Archaeological background of Ancient Lake Paijanne and geological dating of the Meso/Neolithic boundary in Finland," *Bulletin of the Geological Society of Finland* 42 (1970): 119–127.

Table 1. Stray finds from the Late Mesolithic or Neolithic (from c. 6800 to 1500 cal BC) discovered in wet contexts in Finland. KM refers to Kansallismuseo (Engl. National Museum).
1 lentelė. Suomijoje šlapynės kontekstuose aptikti vėlyvojo mezolito arba neolito (maždaug 6800-1500 cal BC) pavieniai radiniai. KM reiškia Kansallismuseo (nacionalinis muziejus).

Collection	Site	Municipality	Location	Find context	
KM 25771; 26331: 1-2; 27146	Astuvansalmi	Ristiina	Lake (by a rock art cliff)	From the bottom of a lake, in front of the Astuvansalmi rock art cliff, in 1990s.	
KM 5529	Hietajärvi	Joensuu	Lake	From Hietajärvi Lake while extracting iron ore from the lake in early 20th century.	
KM 21493:1; 42675	Järvensuo 1	Humppila	Peatland (terrestrialised lake	KM 21493:1 (carved wooden spoon/scoop) and KM 42675 (carved wooden snake figure) from peat representing paludified lakeshore; KM 21493: 1 discovered throuch ditching work and KM 42675 in horizontal position from the depth of c. 0.6 m.	
KM 8241:1-5	Kihliä	Mäntyharju	Peatland	From a drainage ditch into a mire from the depth of c. 50 cm, in the 1920s.	
KM 1922: 392	Metsäpirtti	Koukunniemi	Lake (?)	From silt by Lake Suvanto (nowadays northwestern Russia) in the 1920s.	
KM 21161:1	Kärkänniemi	Joensuu	Lake	From the bottom of a lake (the depth of c. 6-7 meters) c. 400 meters from shore, in the 1980s.	
KM 14189	Lehtojärvi	Rovaniemi	Peatland (terrestrialised lake)	From the paludified shore of Lake Lehtojärvi, southern Lapland, in the 1950s	
KM 14500	Lepaa	Hattula	River (an ancient sea)	From River Lepaanvirta, embedded in Litorina clay, in 1950's. During the Mesolithic period, the find location was at the end of a strait opening to sea.	
KM 14396; 19679; 34861:1	Purkajasuo	Oulu (Yli-Ii)	Peatland (terrestrialised coastal bay in river estuary)	KM 14296 (an amber bead) and KM 19679 (an amber pendant)from drainage ditch in grey silt c. 60–70 cm beneath the topsoil; KM 34861:1 (fragmented amber button) from a peatland test trench on the eastern shore of the ancient bay.	
KM 19006	Ruoksmaa	Askola	Peatland (terrestrialised lake bank)	From a peatland test trench (not reported)	
KM 32410:10; 33458	Silmäkeneva E	Riihimäki	Peatland (terrestrialised lake)	An amber pendant from test pit in peatland (area 8D), from a depth of c. 150 cm and dozens of pottery sherds (over 1.5 kg) from the ancient lake bottom underneath peat, from a depth c. 100 cm	

	Deposition	Relative dating	Radiocarbon determination	References	Notes
	Four amber pendants (two with an anthropomorphic shape, some fragmented)	Middle Neolithic		Grönhagen 1994; Lahelma 2008	
	Pottery vessel	Neolithic			Only two sherds of the vessel were kept and deposited to a local museum.
	Two zoomorphic wooden artefacts (a carved spoon/scoop with a bear head in its handle and a carved snake figure)	Late Neolithic	KM 42675: (Ua-67655) 3908±32 BP or 2471–2291 cal BC; KM 21493: 1 not directly 14C dated, but the find depth represents the site's Late Neolithic cultural horizon	Aalto et al. 1985; Koivisto 2021; Koivisto & Lahelma 2021	The wooden spoon/scoop found nearby the later discovered wooden snake figurine; find ID for KM 42675 P1002 (still in conservation laboratory of Finnish National Museum)
	Five flint bifaces and one retouched flake	Middle Neolithic		Huurre 1960, 2001; Lehtosalo-Hilander 1988	
	An anthropomorphic amber pendant	Middle Neolithic (?)			
	A partial pottery vessel (TCW)	Middle Neolithic		Edgren 1984	
	Elk head figurine made of wood, ca. 37 cm in length	Late Mesolithic	(Hel-168) 7740 ± 170 BP or 7056–6331 calBC	Edgren 1993; Koivisto 2017	
	A zoomorphic antler artefact	Late Mesolithic	(Hela-516) 7420 ± 75 BP or 6434–6099 cal BC	Ojanen 2002; Mannermaa 2016; Ahola & Lassila 2022	
	A cylindrical amber bead, a fragment of a four-sided amber pendant with a drilled hole and a half of a v-perforated amber button.	Neolithic		Núñez & Franzén 2011; Koivisto 2012	
	A pottery vessel	Late Neolithic/Early Bronze Age		Meinander 1954; Koivisto 2017	
	An amber pendant and a complete pottery vessel (Pöljä Ware)	Neolithic		Matiskainen & Ruohonen 2004	

SEARCHING FOR STONE AGE STRAY FINDS IN WATERLOGGED CONTEXTS IN FINLAND

To put the Kihliä deposit into context, we collected data on discoverable stray finds dating to the Late Mesolithic or Neolithic (from c. 6800 to 1500 cal BC) from wet contexts in Finland [Table 1]. Today, searching for known archaeological sites is relatively straightforward using the Finnish Heritage Agency's electronic database[31]. However, filtering the data is challenging. Koivisto[32] systematically collected information on known wetland sites in Finland and searched for new sites through online databases, archival catalogues, and questionnaires for archaeologists. As a result, approximately 70 wetland archaeological sites have been identified across the country, which is probably just the tip of the iceberg considering our vast wetland area. Laitinen[33] also recently examined the feasibility of finding potential wetland sites in the site database, identifying problems and suggesting improvements. In summary, the database does not currently contain a suitable filter for searching for sites in (formerly and presently) watercourses and wetlands. This is probably the main reason why there has been no systematic search and evaluation of stray finds in wetland contexts.

In Finland, wetland sites are most often found in peatlands, coastal waters, or overgrown waterways[34]. Typically, the water level of the sites varies considerably, or they are only partially submerged—or, in the case of peatlands, no longer submerged—representing so-called 'interface sites'. The database's 'underwater site' filter is practically the only means of determining the water level conditions of an archaeological site or stray findspot. However, if all types of 'settlement' sites in wetlands were to be searched in the database, almost 23,000 sites located mainly on (present-day) drylands would have to be analysed[35], posing a significant challenge. More than 10,500 stray finds are also included in the register, almost 6,000 of which are from the Stone Age. Finding potential artefact depositions in waterways or wetlands in the database would, therefore, require a very thorough GIS analysis using, among other things, geological soil information, landscape

31 https://www.kyppi.fi/palveluikkuna/mjreki/read/asp/r_kohde_list.aspx

32 Satu Koivisto, *Archaeology of Finnish wetlands: with special reference to studies of Stone Age stationary wooden fishing structures* (Helsinki: University of Helsinki, 2017).

33 Antti Laitinen, "Kosteikkojen sähköistä kaivuuta," *Arkeologia nyt* (2023): 13–17.

34 Koivisto, *Archaeology of Finnish wetlands*.

35 Laitinen, "Kosteikkojen sähköistä kaivuuta."

reconstructions, and data on peat resources. However, such multidisciplinary analyses remain to be carried out in future projects. In this study, we will focus on the contextualisation of the Kihliä finds and, more generally, on the reflection of the phenomenon of wetland/water depositions in northeastern European Stone Age archaeology.

The Kihliä flint assemblage in light of hunter–fisher–gatherer ritual deposits

THE MATERIALITY OF MESOLITHIC–NEOLITHIC RITUAL DEPOSITS IN NORTHERN EUROPE

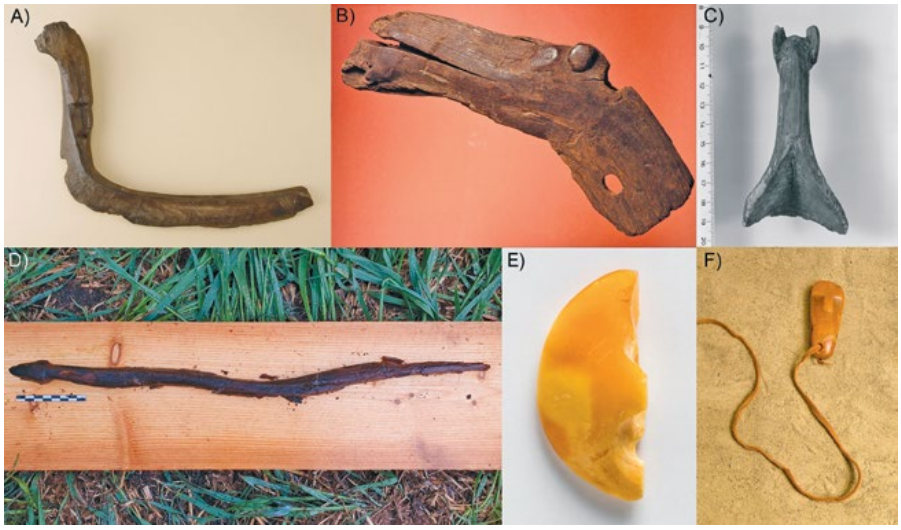
The wetland context of the Kihliä assemblage contrasts with its previous interpretation as a flint trader's cache[36], as artefacts deposited in wet contexts are less likely to have been hidden for safekeeping than those found at settlement sites or buried in the ground. Although an accidental deposition cannot be ruled out, the number of Mesolithic and Neolithic deposits and stray finds in wet contexts across northern and northeastern Europe[37] makes intentionality a more plausible explanation. For example, as many as 58% of Mesolithic deposits in southern Scandinavia have been discovered in wet contexts[38]. As Bjørnevad-Ahlqvist's research[39] has shown, many of the deposited artefacts—most commonly blades and axes made of bone, antler or stone—were also intentionally fragmented or stacked together, suggesting that the chosen items were given special treatment before being removed from circulation. For example, at prehistoric Syltholm Fjord, southeast Denmark, flint artefacts and their debris, animal bones, wooden

36 Lehtosalo-Hilander, "Esihistorian vuosituhannet," 76; Huurre, *Kivikauden Suomi*, 234.

37 e.g., Lars Larsson, "The Ritual Use of Wetlands During the Neolithic: A Local Study in Southernmost Sweden," in *Wetland archaeology and Environments: Regional Issues, Global Perspectives*, ed. Malcolm Lillie and Stephen Ellis (Oxford: Oxbow books, 2006); Søren A. Sørensen, "Syltholm: Denmark's largest Stone Age excavation," *Mesolithic Miscellany* 24, no. 2 (2016): 3–10; Søren A. Sørensen, "Ritual depositions in the coastal zone: A case from Syltholm, Denmark," in *Coastal Landscapes of the Mesolithic: Human Engagement with the Coast from the Atlantic to the Baltic Sea*, ed. Almut Schülke (London: Routledge, 2020); Gummeson, Hallgren and Kjellström, "Keep your heads high,"; Nordqvist, Herva and Sandell, "Water and Cosmology,"; Mathias Bjørnevad-Ahlqvist, "Ritualized Mesolithic Hoarding in Southern Scandinavia: An under-recognised Phenomenon," *Current Swedish Archaeology* 28 (2020): 203–245, https://doi.org/10.37718/CSA.2020.09

38 Ibid.

39 Ibid.



5. Examples of stray finds dating to Late Mesolithic or Neolithic, discovered in wet contexts in Finland. Not to scale. A) KM 14500. Photo: M. Haverinen/Finnish Heritage Agency; B) KM 14189. Photo: Unknown photographer/ Finnish Heritage Agency; C) KM 21493:1. Photo: R. Bäckman/Finnish Heritage Agency; D) KM 42675. Photo: S. Koivisto; E) KM 34861:1. Photo: Unknown photographer/ Finnish Heritage Agency; F) KM 1922:392, photo by an unknown photographer/Finnish Heritage Agency

Vėlyvajam mezolitui arba neolitui priskiriamų pavienių radinių, aptiktų Suomijos šlapynių kontekstuose, pavyzdžiai. Mastelis nenurodytas. A) KM 14500. Nuotrauka: M. Haverinen/ Suomijos paveldo agentūra; B) KM 14189. Nuotrauka: Nežinomas fotografas/Suomijos paveldo agentūra; C) KM 21493:1. Nuotrauka: R. Bäckman/Suomijos paveldo agentūra; D) KM 42675. Nuotrauka: A. B. (nuotr. Nr. 5); F. B. (nuotrauka: S. Koivisto; E) KM 34861:1. Nežinomo fotografo/Suomijos paveldo agentūra; F) KM 1922:392. Nežinomo fotografo/ Suomijos paveldo agentūra nuotr.

artefacts, and pottery have been found clustered in shallow water areas in front of settlements[40], which also served as fisheries[41]. As many of these artefacts were discovered nearly undamaged, their surfaces partly charred but not completely burnt, or arranged in 'unusual' positions, e.g., placed

40 Søren A. Sørensen, "Neolithisation in Denmark from a depositional perspective," in *Changing Identity in a Changing World. Current Studies on the Stone Age around 4000 BCE*, ed. Daniel Groß and Mikael Rothstein (Leiden: Sidestone Press, 2023).

41 Terje Stafseth and Daniel Groß, "Stone Age Fishing in the prehistoric Syltholm Fjord," in *Changing Identity in a Changing World. Current Studies on the Stone Age around 4000 BCE*, ed. Daniel Groß and Mikael Rothstein (Leiden: Sidestone Press, 2023); Satu Koivisto, Harry K. Robson, Bente Philippsen, Terje Stafseth, Marie Brinch, Ulrich Schmölcke, et al., "Fishing with stationary wooden structures in Stone Age Denmark: new evidence from Syltholm Fjord, southern Lolland," *Proceedings of the Prehistoric Society*, 90 (2024), https://doi.org/10.1017/ppr.2024.15

vertically on the seabed, suggesting that these deposits were unlikely to be accidental and may instead indicate ritualised actions[42]. Resembling many Mesolithic–Neolithic burial sites in northeastern Europe[43], the Sylt holm Fjord was used for intentional depositions for almost a millennium, from the Late Mesolithic Ertebølle Culture to the end of the Early Neolithic Funnel Beaker Culture, between c. 4700 and 3600 BC[44], suggesting that the location of the deposits was a meaningful place that was remembered and revisited across generations.

Unlike the examples from southern Scandinavia, Late Mesolithic or Neolithic stray finds from wet contexts in Finland are rare [Table 1; Fig. 5]. As mentioned above, this is likely due to the limitations in the electronic database, which currently lacks a suitable filter for searching for sites in (former and present) wet contexts. Thus, the total number of artefacts we discovered in these contexts is 21, making the data unsuitable for statistical analysis. To date, the Kihliä assemblage remains the only known flint deposit in a wet context in Finland. However, many of the finds—such as the Astuvansalmi amber pendants—are anthropomorphic or zoomorphic artefacts [Fig. 5: A-D, F], which are likely to have held special significance[45]. It is therefore reasonable to assume that these items could have received special treatment before being removed from circulation, meaning they were likely intentional deposits.

Although the Kihliä assemblage is the only flint deposit in a wet context in Finland, flint—including exported flint—is present in Mesolithic

42 Sørensen, "Ritual depositions,"; Sørensen, "Neolithisation."

43 Francis Zagorskis, *Zvejnieki (Northern Latvia) Stone Age Cemetery*. British Archaeological Reports, International Series 1292 (Oxford: Archaeopress, 2004); Mari Tõrv, *Persistent Practices: A Multi-disciplinary Study of Hunter-Gatherer Mortuary Remains from c. 6500–2600 cal. BC, Estonia*. Untersuchungen und Materialien zur Steinzeit in Schleswig-Holstein und im Ostseeraum, 9 (Kiel/Hamburg: Wachholtz, 2018).

44 Sørensen, "Neolithisation."

45 Satu Koivisto and Antti Lahelma, "Between earth and water: a wooden snake figurine from the Neolithic site of Jarvensuo 1," *Antiquity* 95, no. 382 (2021): e19. https://doi.org/10.15184/aqy.2021.79; Kristiina Mannermaa, "An Ornamented Antler Artefact (C. 6200 Cal BC) from Southern Finland and Its Northern European Context," *Mesolithic Miscellany* 2, no. 24 (2016): 19–30; Marja Ahola and Katri Lassila, "Mesolithic shadow play? Exploring the performative attributes of a zoomorphic wild reindeer (Rangifer tarandus) antler artefact from Finland," *Time and Mind* 15, no. 2 (2022): 167–185, https://doi.org/10.1080/1751696X.2022.2098047

6. Flint and slate artefacts from Hartikka Grave 5 (central Finland), photo by M. Miettinen 1988/Finnish Heritage Agency

Titnago ir skalūno dirbiniai iš Hartikka kapo 5 (centrinė Suomija), M. Miettinen 1988 m./ Suomijos paveldo agentūros nuotrauka

hoards in southern Scandinavia[46]. Even more importantly, flint is one of the most the most common raw materials, and oval and rhombus-shaped bifaces are the most numerous flint artefacts collected from TCW graves and additional deposits located next to or above these structures[47]. Consequently, it is reasonable to assume that flint—especially flint bifaces—have played a key role in TCW ritual practices. While such items have also been discovered at settlement sites[48], the most numerous assemblages are derived from ritual contexts. For example, seven flint bifaces and a flint knife [Fig. 6] were unearthed c. 20 cm above the head region of the deceased in Grave 5 of the Hartikka burial site in central Finland[49]. Similarly, eight flint

46 Bjørnevad-Ahlqvist, "Ritualized Mesolithic," 216; Sørensen, "Neolithisation."

47 Marja Ahola, Aija Macāne and Kerkko Nordqvist, "Symbolically overloaded burials: early 4th millennium BC hunter-fisher-gatherer mortuary practices in northeastern Europe," *European Journal of Archaeology*. Published online 2025, 1-19. https://doi.org/10.1017/eaa.2024.54

48 Manninen, Tallavaara and Hertell, "Subneolithic Bifaces."

49 Mirja Miettinen, "Laukaan Hartikan kivikautinen kalmisto," *Keski-Suomi* 19 (1992): 8–23.

bifaces, two flint scrapers, and three flint knives were discovered in Grave 1 of the Kolmhaara burial site in southwestern Finland[50]. Comparable large assemblages of flint artefacts are also known from TCW graves in Latvia and northwestern Russia[51].

Interestingly, amber—the only material securely linked to a ritual deposit in a wet context (Astuvansalmi rock art site) from 4th millennium BC Finland—is the most common material in TCW graves[52]. Given the prominent role of amber—a transfluent, colourful material collected from waterfronts and, in this sense, also associated with water—in the ritualised action of the 4th millennium BC, stray finds of amber in wetland contexts could also indicate intentional deposits. Notably, the Metsäpirtti, Silmäkeneva E, and Purkajasuo amber items were also likely deposited in water [Table 1]. While the context of the Metsäpirtti anthropomorphic pendant [Fig. 5F] remains vague—it was collected from silt by Lake Suvanto in the 1920s—the Purkajasuo artefacts [Fig. 5E] were found in a wetland context that represents an ancient coastal lagoonal landscape at the estuary of the Iijoki River[53]. As the Silmäkeneva E pendant was also unearthed from a context representing an ancient lake bottom, amber seems to be one of the materials used in wet deposits in Neolithic Finland.

Aside from anthropomorphic and zoomorphic artefacts, flint and amber, Finnish Mesolithic and Neolithic stray finds in wet contexts also include pottery vessels. While pottery is one of the most common artefact types found in TCW settlements, ceramic vessels are not typically found in graves from this period[54]. However, partial pottery vessels or their shards have occasionally been discovered either within graves or in additional deposits made below or above these structures[55]. Since intact pottery vessels are also known to have been intentionally placed in wetlands and shallow

50 Torsten Edgren, "Kolmhaara-gravarna," *Finskt Museum* LXVI (1959): 5–25.

51 Matti Huurre, "Viipurin läänin kivikausi," in *Karjalan synty: Viipurin läänin historia 1*, ed. Martti Saarnisto (Karjalan Kirjapaino, 2003); Zagorskis, *Zvejnieki (Northern Latvia)*.

52 Ahola, Macāne and Nordqvist, "Symbolically overloaded burials."

53 Milton Núñez and Peter Franzén, "Implications of Baltic amber finds in northern Finland 4000–2000 BC," *Archaeologia Lituana* 12 (2011): 10–24.

54 Torsten Edgren, *Formgivning och funktion: En kamkeramisk studie* (Finska fornminnesföreningen, 1982); Marja Ahola, "The material culture of Finnish Stone Age hunter-gatherer burials," *Fornvännen* 4 (2017): 201–215.

55 Ahola, Macāne and Nordqvist, "Symbolically overloaded burials"

waters, for example, in Early Neolithic Denmark[56], the vessels accidentally discovered in lakes in Finland [Table 1] could also represent intentional behaviour. Remarkably, one of these vessels was discovered at the bottom of the same ancient lake as one of the amber pendants [Table 1: Silmäkeneva 2].

To conclude, given that the Kihliä flint assemblage was deposited in a wetland and that the items represent artefact types and raw materials commonly used in ritual contexts in early 4th millennium BC northeastern Europe, we propose that the Kihliä assemblage represents an intentional ritual deposit. This interpretation is further supported by the fact that some of the flint bifaces are fragmented. Since the items are otherwise in pristine condition, the phenomenon may indicate intentionality. It is important to note, however, that no use-wear analyses were conducted, and the items were examined solely with the naked eye. Thus, accidental fragmentation cannot be ruled out. Nevertheless, given that intentional fragmentation has been suggested with respect to fragmented flint bifaces from TCW graves[57] and Mesolithic hoards of southern Scandinavia[58], the interpretation of an intentional practice is not implausible. In fact, the intentional fragmentation of stone ornaments was also part of how early 4th millennium BC hunter–fisher–gatherer communities materialised their social relationships[59]. In other words, fragmenting objects to reach a specific goal was a commonly known practice among these people.

From the perspective of ritual interpretation, it is noteworthy that the Kihliä flint bifaces were discovered in a tight cluster. As Bjørnevad-Ahlqvist[60] suggested with respect to southern Scandinavian deposits, such a phenomenon could indicate that the artefacts were placed in a container made of organic materials prior to deposition. Although the porous peat in the depositional environment probably kept the Kihliä artefacts in a tight cluster and no organic materials were reported in the find catalogue,

56 Harry K. Robson, Harley Saul, Valerie J. Steele, John Meadows, Poul Otto Nielsen, Anders Fischer, et al., "Organic residue analysis of Early Neolithic 'bog pots' from Denmark demonstrates the processing of wild and domestic foodstuffs," *Journal of Archaeological Science: Reports* 36 (2021): 102829, https://doi.org/10.1016/j.jasrep.2021.102829

57 Ahola, "The material culture," 211;

58 Bjørnevad-Ahlqvist, "Ritualized Mesolithic," 221–223.

59 Ahola, Holmqvist and Pesonen, "Materialising the Social."

60 Bjørnevad-Ahlqvist, "Ritualized Mesolithic," 226-227.

it is worth mentioning that both artefacts and human remains have been discovered wrapped or placed in containers made of organic materials in Mesolithic–Neolithic burial sites in northeastern Europe[61]. While speculative, this could indicate that the bundling of objects and people was part of the 'action kit' used when performing these rituals. However, the meaning behind these practices may not be the same as, for example, in indigenous North America, where Amerindian bundles were considered animate beings and played a key role in numerous ritual performances[62]. As Swenson[63] proposed, in archaeological contexts, material evidence of such bundles could nonetheless be understood as an indicator of ritualised action.

CLAIMING THE HINTERLAND

When the Kihliä assemblage is understood as a ritually marked deposit, a new line of research concerning the find location emerges: why was the deposit made at this specific location? According to Jordan[64], northern hunter–gatherer groups commonly marked repeatedly visited focal places, often located by special topographic features, with distinctive deposits, caching or creating rock art to express and reproduce the relationship that links the human collective with the surrounding ecology. As Whallon[65] explains, the embedded function of these practices was often to monitor

61 Liv Nilsson Stutz, "Unwrapping the Dead," in *Back to the Origin. New research in the Mesolithic-Neolithic Zvejnieki cemetery and environment, Northern Latvia*, ed. Lars Larsson and Ilga Zagorska (Stockholm: Almqvist & Wiksell International, 2006); Tõrv, *Persistent Practices*; Marja Ahola, Death in the Stone Age: Making Sense of Mesolithic-Neolithic Mortuary Remains from Finland (ca. 6800-2300 Cal BC) (Helsinki: University of Helsinki, 2019); Anđa Petrović, Aija Macāne, Ivars Strautnieks, Laimdota Kalniņa, Elisabeth Holmqvist, Emily M. Hunter, et al., "Stone axes throw new light on Baltic stone age mortuary rites," *Scientific Reports* 14 (2024): 16219, https://doi.org/10.1038/s41598-024-66854-9

62 Timothy R. Pauketat, *An Archaeology of the Cosmos: Rethinking Agency and Religion in Ancient America* (London: Routledge, 2013).

63 Edward Swenson, "The Archaeology of Ritual," *Annual Review of Anthropology* 44 (2015): 329–345, http://dx.doi.org/10.1146/annurev-anthro-102214-013838

64 Peter Jordan, "Northern Landscapes, Northern Mind: On the trail of an 'Archaeology of Hunter-gatherer belief'," in *Belief in the Past. Theoretical Approaches to the Archaeology of Religion*, ed. David S. Whitley and Kelley Hays-Gilpin (London: Routledge, 2008), 241.

65 Robert Whallon, "Marked Sacred Places of Hunter-Gatherer Bands," in *Marking the Land. Hunter-Gatherer Creation of Meaning in their Environment*, ed. William Lovis and Robert Whallon (London: Routledge, 2016).

environmental conditions, either directly or through interpersonal communication. Although we cannot assume that the Mesolithic and Neolithic hunter–fisher–gatherers of northeastern Europe shared their considerations of the cosmos with historical forager and pastoralist communities of the Northern Hemisphere, more recent hunter–gatherers may provide some clues about how Stone Age people viewed their physical environment, both practically and cognitively[66].

In light of the above, it is interesting that prehistoric rock art sites in northern and northeastern Europe are often located on or near prominent topographic features, such as imposing cliffs that may resemble an anthropomorphic form, rapids, or sites with adjoining echoes[67]. In accordance with Bradley's reasoning[68], archaeological evidence from these sites suggests that prehistoric peoples also regarded such anomalous landscape features as significant. In other words, even if the landscape was not heavily shaped by humans, it may have been subject to some form of conceptual control[69]. As occasionally the same cliffs have also been visited and marked for millennia if not even longer[70], such conceptual control also seems to have been transmitted across generations. As the same phenomenon can be observed in coeval burial sites[71] and ritual deposit sites[72] in the region, the

66 Adrian Currie, "Ethnographic analogy, the comparative method, and archaeological special pleading," *Studies in History and Philosophy of Science*, Part A, 55 (2016): 84–94, https://doi.org/10.1016/j.shpsa.2015.08.010

67 Charlotte Damm, "Spiritual landscapes: Diversity in practices and perceptions in Northern Fennoscandia," in *Perspectives on differences in Rock Art*, ed. Jan-Magne Gjerde and Mari Srifeldt Arntzen (Sheffield: Equinox, 2021); Knut Helskog, "The Shore Connection. Cognitive Landscape and Communication with Rock Carvings in Northernmost Europe," *Norwegian Archaeological Review* 32, no. 2 (1999): 73–94; Lahelma, *A Touch of Red*; Riitta Rainio, Julia Shpinitskaya, Paavo Rinkkala, Jami Pekkanen, Perttu Kesäniemi and Mikko Ojanen, "Reflected Encounters at Hunter-Gatherer Rock Art Sites by the Water," *Sound Studies*, November (2024): 1–36, https://doi.org/10.1080/20551940.2024.2419293

68 Bradley, *An archaeology of natural places*.

69 see Mikael Rothstein, "Perceptions of Stone Age Landscapes? A note on how humans of the Stone Age may have experienced their surroundings," in *Changing Identity in a Changing World. Current Studies on the Stone Age around 4000 BCE*, ed. Daniel Groß and Mikael Rothstein (Leiden: Sidestone Press, 2023).

70 Oula Seitsonen, "Shoreline displacement chronology of rock paintings at Lake Saimaa, eastern Finland," *Before Farming* 1 (2005): 1–21.

71 Zagorskis, *Zvejnieki (Northern Latvia)*; Tõrv, *Persistent Practices*; Ahola, *Death in the Stone Age*.

72 Sørensen, "Neolithisation."

meanings attached to a place clearly constituted an important part of the cosmos of these people.

In light of the above, the location of the Kihliä deposit likely marks a specific landscape feature. Although we have only a rough estimation of the location of the findspot [Fig. 4B], our analysis suggests that the deposit was made in a wet context. This is significant, because wetlands and other wet landscapes are frequently incorporated into theories, where they are regarded as significant features—marginal, central, liminal, or otherwise meaningful[73]. A good example of this practice is found in the northern Baltic Sea region, where the conceptual organization of the world based on the land–sea opposition has been proposed as a key cosmological principle from the Stone Age to the recent past.[74] In Finland, where strong isostatic rebound, eustatic changes in the water level of the Baltic Sea, local topography, and climate fluctuations have had dramatic effects on the formation of many landforms[75], including wetlands and other water bodies, prehistoric populations' perceptions of wet contexts may have, however, changed significantly over time[76]. At the same time, the dynamic and changing shoreline might also have had strong cosmological implications that contributed to the personalities and social agency of these places[77]. This, on the other hand, could have resulted in their use as places for ritual activity. Overall, the constantly shifting and changing wet contexts can easily be seen as liminal, anomalous, or focal places that are in need of conceptual control.

73 Francesco Menotti, *Wetland Archaeology and Beyond. Theory and Practice* (Oxford: Oxford University Press, 2012).

74 Christer Westerdahl, "Seal on land, elk at sea. Notes on and applications of the ritual landscape at the seaboard," *International Journal of Nautical Archaeology* 34 (2005): 2–23.

75 e.g., Mikael A. Manninen, *Culture, behavior, and the 8200 cal BP cold event. Organisational change and culture environment dynamics in Late Mesolithic Northern Fennoscandi*a. Monographs of the Archaeological Society of Finland, 4 (Helsinki: The Archaeological Society of Finland, 2014).

76 Koivisto, *Archaeology of Finnish wetlands*.

77 Vesa-Pekka Herva and Timo Ylimaunu, "Coastal Cosmologies: Long-Term Perspectives on the Perception and Understanding of Dynamic Coastal Landscapes in the Northern Baltic Sea Region," *Time and Mind* 7, no. 2 (2014): 183–202, https://doi.org/10.1080/1751696X.2014.891915; Marja Ahola, Katri Lassila and Kristiina Mannermaa, "Doing landscape: sensorial and artistic approaches to Donkalnis and Spiginas Mesolithic-Neolithic ritual sites in Western Lithuania," *Time and Mind* 17, no. 1-2 (2024): 9-33, https://doi.org/10.1080/1751696X.2024.2338055

Although it is located in a wet context, our analysis reveals that the Kihliä deposit was not made in immediate proximity to the lakeshore. In this sense, the location of the deposit differs from those of early 4th millennium BC settlements[78], rock art[79], and burial sites[80], which are all located along lake or sea shores. Instead, the Kihliä deposit represents a ritual deposit made in the hinterland, away from known Stone Age settlements in the region [Figs. 3–4]. This finding not only makes the Kihliä deposit unique but also challenges the role of forests and hinterlands simply as 'resource areas'[81]. Indeed, while it is self-evident that the forests surrounding settlements are vital places for acquiring food and raw materials, hinterlands are not as commonly surveyed or researched as nearshore regions[82]. However, in light of the Kihliä deposit, it seems reasonable to assume that different kinds of activities also took place in these woodlands. The location of the Kihliä find, which is situated in the transitional zone between the lakeshore and the backwoods [as shown in Fig. 4B and its surroundings] along the waterways leading into the hinterland, suggests that depositing items at this particular spot might have been necessary to mark—or negotiate—one's presence in the area. In essence, it served as a means of claiming rights to the hinterland.

We have not visited the site; however, in the future, it might be fruitful to explore the multisensorial landscape of the location to see whether there is something about this place that could have set it apart from its surroundings during early 4th millennium BC and whether any remnants of

78 Teemu Mökkönen, *Studies on Stone Age Housepits in Fennoscandia (4000-2000 cal BC) : Changes in ground plan, site location and degree of sedentism* (Helsinki: University of Helsinki, 2011).

79 Lahelma, *A Touch of Red*.

80 Ahola, *Death in the Stone Age*.

81 cf. Almut Schülke, "From Coastal Sites to Elevated Hinterland Locations in the Mesolithic – Discussing Human–Woodland Interaction in the Oslo Fjord Region, Southeast Norway," *Open Archaeology*, 9 (2023): 20220290, https://doi.org/10.1515/opar-2022-0290

82 Herva and Ylimaunu, "Coastal Cosmologies,"; Almut Schülke, "First visit or revisit? Motivations of mobility and the use and reuse of sites in the changing coastal areas of Mesolithic southeastern Norway," in *Coastal Landscapes of the Mesolithic: Human Engagement with the Coast from the Atlantic to the Baltic Sea*, ed. Almut Schülke (London: Routledge, 2020); Lauri Skantsi, Petro Pesonen, Miikka Tallavaara and Markku Oinonen, "Exception proves the rule: divergent patterns in settlement locations in Central and Southern Ostrobothnia," in *Moving Northward. Professor Volker Heyd's Festschrift as he turns 60*, ed. Antti Lahelma, Kristiina Mannermaa, Mika Lavento, Marja Ahola, Elisabeth Holmqvist and Kerkko Nordqvist (Helsinki: The Archaeological Society of Finland, 2023).

that distinctiveness would still be perceptible after thousands of years[83]. As mentioned above, there has been very little archaeological activity in the area, and it is likely that several unidentified Stone Age sites still exist in the region. It would also be interesting to study the findspot itself in more detail, for example, by performing systematic coring and radiocarbon dating of the peat layers to obtain more accurate details of the depositional environment.

Conclusions

In this paper, we revisited the Kihliä assemblage, a stray find of several flint artefacts dating to early 4th millennium BC, which were discovered over one hundred years ago in a peatbog in southeastern Finland. By attempting to reconstruct the findspot and its environmental context during the period in question by using historical and geological data together with the literature, we conclude that the deposit was made in a wetland located in a forested hinterland location on the outskirts of Lake Kihliänjärvi. Furthermore, by contextualising the findings in light of known early 4th millennium BC ritual depositional practices in northeastern Europe and by comparing those practices to practices noted from preceding periods in the nearby region of Finland, we showed that the Kihliä deposit was likely a ritually marked deposit.

Notably, the nature of the Kihliä deposit as a ritual deposit in a wet context in a forested hinterland sets the find apart from other ritually marked deposits or sites in early 4th millennium BC Finland and suggests that ritual activity of the period was not always shore-bound. Instead, the Kihliä deposit suggests that small water bodies or wetlands located in woodlands, or water routes leading to the hinterland, could also act as locations of ritualised activities. In this sense, the findings support the common archaeological survey practices that, with respect to the Stone Age, prioritise lake and sea shores. At the same time, they open new avenues for research into such locations, traditionally categorised merely as 'resource areas'.

Given the above, we conclude that when discovering stray finds—especially assemblages of artefacts treated in a special way, items made

83 Ahola, Lassila and Mannermaa, "Doing landscape."

of raw materials present in secure ritual contexts or located in somewhat anomalous natural landscapes—the presence of an intentional deposit relating to ritualised activity should be taken into account. Furthermore, when exploring such activities, greater emphasis should also be placed on the role of the hinterland in such practices.

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Santrauka

Šlapynių depozitai hinterlanduose: Kihliä titnago radinių sankaupa (pietryčių Suomija) medžiotojų-žvejų-rankiotojų ritualinių praktikų Šiaurės Rytų Europoje IV tūkstantmečio pr. Kr. pradžios kontekste

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Reikšminiai žodžiai: Depozitai, medžiotojai-žvejai-rankiotojai, neolitas, šlapynių kontekstai, hinterlandai, Suomija.

Šiame straipsnyje dar kartą apžvelgiamas Kihliä depozitas - prieš daugiau nei šimtą metų pietryčių Suomijoje aptiktas atsitiktinis radinys, kurį sudaro keli IV tūkstantmečiu pr. Kr. pradžia datuojami titnago dirbiniai. Bandant rekonstruoti radimvietę ir jos aplinkos kontekstą aptariamuoju laikotarpiu, remiantis istoriniais ir geologiniais duomenimis bei literatūra, straipsnyje daroma išvada, kad radinys buvo rastas pelkėje, esančioje miškingoje užmiesčio vietovėje netoli Kihliänjärvi ežero. Be to, apibendrinus radinius ir atsižvelgiant į žinomus IV tūkstantmečio pr. Kr. pradžios ritualinio deponavimo būdus Šiaurės Rytų Europoje ir palyginus juos su ankstesniais laikotarpiais netoliese esančiame Suomijos regione pastebėtais būdais, straipsnyje parodoma, kad Kihliä radinys greičiausiai buvo deponuotas ritualiniais tikslais.

Tyrimų rezultatai atskleidžia, kad Kihliä depozitas skiriasi nuo kitų IV tūkstantmečio pr. Kr. pradžios Suomijoje ritualinių vietovių, kurios ribojasi su krantu. Atitinkamai straipsnyje daroma prielaida, kad nedideli vandens telkiniai ar pelkės, esančios miškingose vietovėse, arba vandens keliai, vedantys į šalies gilumą, taip pat galėjo būti ritualinės veiklos vietos. Šia prasme straipsnyje ginčijama įprasta archeologinių tyrimų praktika, pagal kurią akmens amžiaus atžvilgiu akcentuojamos ežerų ir jūrų pakrantės. Kartu jis atveria naują tyrimų kryptį tiriant vietoves, kurios paprastai vadinamos „išteklių zonomis“.

Atsižvelgiant į tai, kas išdėstyta, straipsnyje daroma išvada, kad aptikus tokius radinius, t. y. ypatingu būdu deponuotų daiktų, pagamintų iš žaliavų, esančių ritualiniuose kontekstuose arba esančių kiek neįprastuose gamtiniuose kraštovaizdžiuose, reikėtų apsvarstyti tyčinio deponavimo, susijusio su ritualine veikla, tikimybę. Be to, tai tyrinėjant daugiau dėmesio reikėtų skirti ir hinterlando svarbai.