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# Water politics. Wet deposition of human and animal remains in Uppland, Sweden

By Christina Fredengren

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This paper presents evidence for deposition of human and animal remains in watery locations in Uppland province. Likewise, deposition of artefacts in watery locations also seems to continue into the historical period. This changes the previous understanding of such depositions with regards to their geographical distribution, their contents and how long the practices continued.

It is argued that the changing water landscape and the deposition of bodily remains of certain human and animal others co-worked agentically to change a variety of relations over time, which had political effects. These assemblages operated to draw attention to and from settlement clusters and central places, and were important in negotiations of boundaries. Furthermore, some depositional sites used in earlier periods seem to have attracted renewed attention at the end of the Viking Period. Hence, these depositions may have been important in the transition from Paganism to Christianity, and also helped merge communities and faiths.

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There may have been no clearly established or institutionalised religion or unified cosmology in the Norse area in prehistory (Sundqvist 1998; 2002, p. 76 ff). But a number of features do recur in the archaeological and written material. Among these are the sacred grove, the hall building and the well. In Norse mythology the world tree Yggdrasil draws water from two wells at its roots, the wells of fate and wisdom.

Wells have been found at central places like Gudme, and these would have been important in the construction of a cosmological landscape that mimicked Asgard (Hedeager 2001; 2011, pp. 148–163; Jørgensen 2009). As argued by Lotte Hedeager (2011, p. 152) other central places such as Uppåkra (Hårdh & Larsson 2007), Helgö (Zachrisson 2004) and Old Uppsala (Sundqvist 2004) may have been organised and developed following similar mythological models. Asgard was made

material through landscape, buildings, depositions and other activities at these central places.

The literary sources mention human and animal sacrifice, in the case of Old Uppsala in connection with a well. Adam of Bremen's fourth book describes this well as a place where the pagans would get their wishes fulfilled if they threw in, and thus sacrificed, a living human. A condition of this wish fulfilment was that the sacrificial victim should not be found and retrieved from the water (Adam, *History* ch. 26, scol. 138). It is not clear if this is a reference to a built well, a spring or some other type of watery environment. Furthermore, so far, very little material evidence for such a sacrificial well has been found. There have been various candidates at Old Uppsala.

One is "Odin's well", excavated by Martin Olsson (1912). Museum Gustavianum holds a collection of bones that may or may not be connected

to the use of this well. The museum inventory states that horse and cattle bones were found at a depth of 1.4 m below the surface, and that human bones were found at a depth of over 2 m. However, deep excavations right beside the well have also produced bones, which suggests that the well may have been dug in a cemetery. Odin's well was long believed to date from the 17th century (Sundquist 1953), but recent dendrochronological dating places it around AD 1180 (Linderson 2013; Frölund 2014).

Two other possibilities would be the former lake Myrby träsk, located to the north-west of the three great barrows (Damell 1980) and the natural spring "Minurs brunn" (Raä 261; Lindqvist 1936, p. 82). Another possible location is the former wet area located to the south-east of, and framed by the major mound alignment. Some scholars including Magnus Alkarp (2009) have seen the documentary descriptions as not having much bearing on lived reality, and the archaeological material that would support an interpretation that ties human sacrifice to a well at Old Uppsala is less than clear.

Significant finds of what has been understood as human sacrifices in wetlands, such as Tollund man, have however been made in Denmark and belong to the Pre-Roman Iron Age (Glob 1969). Bog body research generally centres on Western Europe (Sanden 1996; Bennike 1999; Aldhouse-Green 2002) and few such finds are known from Sweden. However, there are uncertainties both with the spatial and temporal boundaries of the practice of depositing human and animal remains in waters and wetlands. While some sites were noted by Ulf Erik Hagberg (1967), Per Karsten (1994) and Gunilla Larsson (2007), much of the data set collected for this paper is new to research. It was compiled in the project "Tidens Vatten" and adds material from Sweden that has not been the subject of archaeological debate before. The data indicate that wetland depositions of bodily remains took place much farther north than what previously understood and continued well beyond the Pre-Roman Iron Age in this area.

The project aims to offer an overview of such depositions in Sweden. The overarching research questions are when and where it was common to deposit humans and animals in wet contexts, who was deposited and what effects this had. In particular this research aspires to produce an understanding of how these depositions would have worked, particularly in the Late Bronze Age and the Iron Age, and to see if the depositions were connected to practices of social inclusion and exclusion.

This paper aims to examine the role of deposition and watery environments in geopolitics and water politics, as well as in tensions between faiths, and presents material mainly from Uppland. This means that it deals with how political power made use of human and animal bodies and watery landscapes to bring about both stability and change. Some material from the Bronze Age is presented, but the particular focus is on the Late Iron Age and relationships around Old Uppsala and River Fyrisån. Hence, the paper addresses the theme of human and animal sacrifices at central places such as Old Uppsala, but also in the surrounding area.

The questions asked are: Where did these depositions occur and when? What was the relationship to settlement centres and landscape? This leads to further questions, such as what the relationship was between these depositions and central places such as Old Uppsala, as well as their importance in the transition to new faiths.

#### Research design

This paper operates at a general landscape level. The questions have been dealt with through a screening of museum inventories for human and animal bones from wet contexts. The collections of the Swedish History Museum in Stockholm, and Museum Gustavianum and Upplands-museet (both in Uppsala) are in focus. The site register of the Swedish National Heritage Board has also been consulted. Note however that there may be an underestimation of the number of sites as such bone depositions many not always have been assigned full site status. The appended catalogue lists finds from wet contexts and contexts that may have been wet in the past as judged by sediment types and land elevation models. The finds have been recorded and compiled in a database with coordinates used for GIS mapping. The maps draw on Plikk 2010 and Sund 2010 for shoreline

displacement models, outlining areas covered with water in the past. Note that the shoreline displacement history around present-day Uppsala and Fyrisån is complex and needs further research.

Bones have been radiocarbon dated, with at least two samples from either human or animal individuals collected from each site. However, finds from a number of identified sites have not been located in the museum storages. This has added an element of randomness to the statistics, and other patterns may emerge once these finds are retrieved and dated. The dates have been calibrated with Oxcal 4.2 at 2 sigma. For a few sites there are radiocarbon dates from earlier projects. These have been recalibrated if available in a suitable format with a clear measurement of statistical error. There may be a need to review some of these in the future, particularly the earlier analyses. Also, certain finds that are contextually dated may need to be revised.

Geopolitics and water politics are discussed in relation to an overview of field surveys and excavation reports, as well as a review of existing research on political and geographical tensions around Old Uppsala (Lindkvist 1936; Sundquist 1953; Alkarp 1998; 2009; Anund 2000; 2008; Sundqvist 2002; 2004; 2013; Ljungkvist 2006; 2013; Gräslund 2013; Zachrisson 2013), in comparison to other central places (cf. Jørgensen 2009; Hedeager 2011). The paper also ties into current discussions on how water works as an agential force in political development (Edgeworth 2011; Strang 2014). It is argued that a merging of cultural and natural forces, where both altered water landscapes as well as depositions, played an important role in changing the geographical focus of central places, and in the transition between faiths.

#### Central places, sacrifice and paganism

Many central places have yielded evidence for the deposition of wealth in hoards, such as Gudme, Uppåkra, Helgö and Old Uppsala. Many of these hoards are from dry contexts. Their relationship to wetland deposition has been a matter of debate. Charlotte Fabech (1991; 1994) has argued that wetland artefact depositions continued until about AD 500, whereupon the rituals were moved to high-status dry land settlement sites. Torun

Zachrisson (1998, p. 118) on the contrary argued that wetland deposition of precious metalwork continued in central Sweden throughout the Late Iron Age. Hedeager (1999; 2011, p. 168 f) claims that wetland artefact deposition continued at least up until AD 1000, but suggests that the practice of depositing hoards may have continued on into the 16th century, increasingly focusing on coins. This discussion has however not dealt with any continued deposition of human and animal remains in wetlands throughout the Iron Age and into the period of written history, which is presented in the present paper.

There are references to human sacrifice in iconography and documentary sources (Hedeager 2011, p. 103), and there are examples from dry archaeological contexts. Human sacrifice is often called upon to explain Late Iron Age graves with more than one body, such as on Frösön island (Iregren 1989), at Bollstanäs (Hemmendorff 1984) and at Birka (Holmqvist Olausson 1990; see also Price 2008, p. 266 f). Human and animal body parts found in settlement contexts have also been seen as evidence for sacrifice, for instance at Uppåkra's "cult building" (Hårdh & Larsson 2007, p. 52; Hedeager 2011, p. 103; Magnell 2011), at various aristocratic settlements in South Scandinavia (Jørgensen 2009; 2014) and at sites further north, such as Ströja in Norrköping. There, parts of four human skulls dating from the 8th and 9th centuries were found near a hall building (Hjulström 2012). Furthermore, animal remains found at a major hall building at Hofstadir on Iceland have been understood as sacrifices (Lucas & Mc-Govern 2007). Human bones from the Early Roman Period have been found in a well at the Kyrsta settlement in Uppland (Eklund et al. 2007, p. 480 f). This suggests that such depositional practices did not only occur at central places and in aristocratic environments, but also at ordinary settlements.

Evidence for sacrifice connected to water has not yet been found at many of these central places. Instead the issue of human and animal sacrifice at wells, as mentioned in the sources, has with a degree of reluctance been associated with the study of Early Iron Age bog bodies (Sundquist 2004, p. 153; Hedeager 2011, p. 100).

Research on bog bodies is often linked to dis-

cussions of prehistoric religion. The focus of this paper is slightly different as, guided by the radiocarbon dates, it deals mainly with the period of conversion to Christianity. This transition was discussed in the project "The Christianisation of Sweden" (Nilsson 1996). Martin Carver (2003) also reflects on the not always smooth process of conversion from paganism to Christianity in the period AD 300-1300. In a follow-up volume Carver et al. (2010) discuss "paganism" as a useful but problematic term in relation to Christianity, and argues that it may be better to study paganism by investigating local beliefs rather than grand religious institutions. Anne-Sofie Gräslund (1987; 2013) has reflected on the spread of the new religion through the Uppsala area as shown in rune stones and graves. She argues that Old Uppsala was not the pagan stronghold that Adam of Bremen made it out to be in the 1070s. Stefan Brink (2012, p. 621) views the conversion as a gradual process rather than a definitive event. Olof Sundqvist (2013) provides an overview and critique of the literary sources and suggests that old religious practices survived for quite some time. As Julie Lund (2010, p. 59) notes, early Scandinavian law codes prohibit all manner of sacrificial practices, but not in particular wetland sacrifices. Alexandra Sanmark (2004, p. 151) points out however that the English laws of King Canute acted against the worship of wells. Pagan sacrifice may well have been an important political factor both in reality and in the political imagination, as evidenced by Medieval literary sources in Ireland (Fredengren 2010) and also in Scandinavia and Britain.

Whereas, the term "paganism" is problematic, so is the concept of sacrifice. The understanding of the term has varied over time. Early, and still influential, writers on the subject, Henri Hubert and Marcel Mauss (1891), described sacrifice as a way of negotiating between the sacred and the profane. The political side of sacrifice has been emphasised by Marcel Detienne (1989), and the term is often used in archaeology to denote active killing and differential treatment of some bodies. Other classics on the theme of sacrifice are René Girard 1977, roughly understanding sacrifice as originating in society's need for scapegoats. The term *blót* in Old Norse texts such

as Hávamál is generally translated as "sacrifice" or "sacrifical feast" (Näsström 2002, pp. 28-33).

Another important question in the study of sacrifice is where the boundary between living and dead objects was drawn. Richard Bradley (1990) followed Hubert & Mauss in categorising the destruction of animate materials such as humans, animals and plants as sacrifices, whereas inanimate materials such as objects were seen as offerings. Lund (2010, p. 51) instead argues that there may have been no such clear boundary. Artefacts may also have been understood as imbued with life. Against that background the term "sacrifice" could be applied to both. As Asa Berggren (2010) argues, the term "sacrifice" has been used in archaeology as a catch-all category to denote such material that does not fall into the settlement or burial categories. Joanna Brück (1999) makes a similar argument for the term "ritual", that is used for all practices not seen as functional. She urges archaeology to move on from this use and to investigate ritualisation practices. Depositions in water could also be understood as a result of burials (Wessman 2009). Finds of human bones in water, such as those from Tollense, have also been understood as the remains of battles near the shore (Jantzen et al. 2011). Other interpretations are that the finds represent drownings or waste disposal.

This paper uses the term "depositions" broadly. It covers the placing of bodies in wetland contexts by various actors and for various causes, from the erosion of shoreline burials (such burials from the Viking Period and also earlier periods have for example been noted along River Sävjaån - Fagerlund et al. 2014, p. 29) to the deliberate placing of both waste and sacrifices in water. The term "sacrifice" is used in a pragmatic sense, intending to examine the usefulness of the term to archaeology in a future publication. Here, the field of bio- and necro-politics is worth exploring (Braidotti 2013, pp. 95-98), i.e. which lives are qualified for protection and which are left out, and what powers control bodies and mortality. Furthermore, sacrifice could indeed be understood as necro-politics, where the border between life and death was managed as a way of exercising power, where certain lives were enabled, while others were terminated and used as religious materiality.

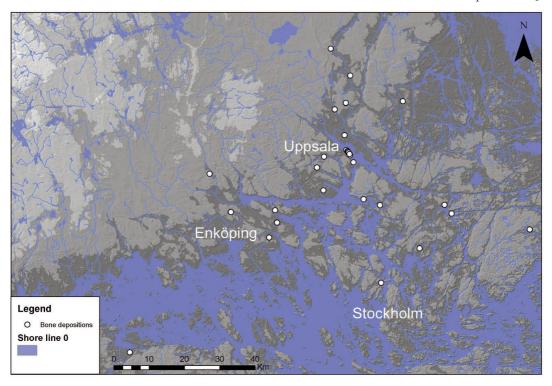


Fig. 1. Map of human and animal depositions in Uppland province. Shoreline c. AD 1 after calculations by Sund 2010.

#### Where and when?

This project has identified depositions of human and animal remains from wet contexts at over 100 sites over most of Sweden: from Scania in the south to Jämtland in the north, where human remains have been found in a bog on Frösön Island (this site will be addressed in coming research - thanks to Anne Monikander for information about this site). A particularly dense concentration is found in Uppland where human and animal bones have been recorded from 21 localities - that is if the depositions along River Fyrisån near Uppsala are counted as one locality (fig. 1, Appendix). These depositions contain bones of at least 95 individuals, human and non-human. They derive mainly from bogs, rivers and wells. No comparable density has been observed in nearby county Södermanland, which only has depositions from a handful of locations. This may signify political differences.

The project is in the middle of a radiocarbon

dating programme for the Swedish material. For Uppland the results range mainly from the Early Bronze Age to the Late Iron Age. There are also a few dates in the 12/13th centuries AD and the Early Modern period. Several sites have produced dates from more than one period. This suggests either that earlier deposition sites and sites with traditions were re-activated at a later point in time, or that old, possibly ancestral or heirloom bones were re-used in new contexts.

When plotted on a map, the radiocarbon dated finds form temporal and spatial patterns. The earliest find's date straddles the start of Per. III of the Bronze Age: it is located in the north part of the study area at Gryttby (or Gryteby) in Vendel parish. The finds from Per. III-VI are located around the mouth of present-day River Örsundaån, at Torresta to the north and southward towards Enköping, with a particular concentration south-west of Örsundsbro. Among these are animal bone depositions, such as the cattle and pig bones from Hjältängarna (Raä Härnevi 113 & Vårfrukyrka 505, thanks to Martin Rundkvist for drawing my attention to this site) dating from Per. III–V. According to museum documentation, there were human bones too from this wetland area on the boundary of two parishes with theophoric names. Animal bones were also found at Knyllinge, situated on the boundary between Fröslunda and Biskopskulla parishes. These were associated with a wooden trackway dating from the Late Bronze Age (Raä 98; ATA 4719/93; Jensen 1996), though the bones gave a date in the Early Iron Age. A new depositional site of animal bones at a ford has recently been identified in Riala (pers. comm. Kjell Andersson).

In a well at the Bronze Age settlement of Apalle were found both human and animal bones (cattle and pig). The well has foundation dates from around 1350 cal BC (i.e. Per. II/III), but the bones were found in the upper part of the fill and may thus be a few centuries later (Ullén 1995).

Horse bones were found at Rickebasta in Alsike and dated to Per. V–VI. These are old, perhaps not entirely reliable radiocarbon dates. Our new radiocarbon analyses confirm depositions in the Late Bronze Age, but also indicate that certain horse bones from Rickebasta date from the Migration Period. Intriguingly, one date in the 17th century cal AD or later also emerged. There are a number of different interpretations of this: that the late date is erroneous or that the practice of deposition continued into the Early Modern Period.

The Bronze Age group also includes Granhammar Man, a skeleton found in the clay of a landlocked former bay and dated to Per. V. This person has been interpreted as a unique murder victim (Lindström 2009). Human and animal bones have also been found during dredging of River Örsundaån at Eneby in Altuna parish (Larsson 2007), where timbers representing a bridge or a platform were also found. These have not been located in the museum stores. Human and animal bones of this period have also been found in the wetlands around lake Hallarbysjön (Raä Litslena 465 & 600, thanks to Jhoony Therus).

The numbers increase slightly during the Early Iron Age, with finds both in the Örsundaån area and increasingly closer to present-day Uppsala. The earliest Iron Age find is human remains

from Lake Sätrasjön, followed by bones found "deep in the clay very near the river" in line with the Johannesgatan street in Uppsala where it crosses River Fyrisån (roughly at Järnbron bridge). These all date from the Pre-Roman Iron Age.

One of the deposits from Knyllinge has a date that stretches across the AD 1 boundary into the Roman Iron Age. The human remains from Torresta date from this period. Again, this shows that a number of these sites contain multi-period material, which suggests engagement with earlier depositional places and/or the re-use of bones from the past. At Tadem, animal bones have been found at a brushwood platform, where dating of wood places the site in this general period (1875 ±70 BP, 180 cal BC – 210 cal AD, 1 sigma, St-12270; ATA 4646/87; Olsson 1993). However, as exemplified by Knyllinge, these may be multi-period sites and the date of a structure may not always be the same as the surrounding depositions.

Also from the Roman Iron Age are finds of horse bones from Stora Ullentuna as well as a mix of human and animal bones from a well at Gödåker. The latter find context is uncertain, and it is not clear if the bones belong to the well's use phase or came in with later backfill (pers. comm. Kent Andersson). The Gödåker cemetery is generally dated to c. AD 100–400, and it is possible that the bone depositions belong to the same period, though the find context is rather uncertain. The place name, "God Field", has been connected to the cult of Nerthus (Almgren 1916; Ekholm 1925ab).

Larsson (2007, p. 241 f) has noted animal bones as being found in a wetland together with a Late Bronze Age hoard at Sigridsholm in Lunda parish. The site has also yielded a Viking Period sword (SHM 6742) showing that the depositions continued at this significant site. In the documentation of the find of animal bones however, Claes Varenius (ATA 6260/1956) states that they were found during digging for a drain pipe near a house, the bones were discarded as being Medieval or recent by the surveyor, and their connection to wetland and the hoard is not clear.

Depositions of human and animal remains from the Migration, Vendel and Viking Periods form a large group in this material. Particularly interesting is the group of finds from River Fyris-

ån. There are 14 entries from this river, representing about 20 individuals. These derive particularly from the area south of Islandsbron bridge and Föret, a lake-like expansion to the south on the river. Some radiocarbon dates indicate depositions in the Vendel-Viking Periods. Curiously few animal bones have been recorded from the middle stretch of River Fyrisan, suggesting that this part of the river was reserved for human depositions. Source-critically speaking though, it can also be due to a tendency to collect human bones more readily than those from animals. There is nevertheless a find of two bone fragments and a pig tooth (UM 21559 b) that may derive from this riverine context.

Some of the remains derive from complex contexts, where it is harder to judge if they represent riverside erosion near burials or depositions in wet contexts. Bent Syse (2003, p. 36) has directed attention to finds of human remains from Trädgårdsgatan 9 and 10 in Uppsala. One of these (MAC 202a) is from rather shallow contexts and gave a date of 890-1150 cal AD (1045±30 BP, Ua-20082). Another human skull (MAC 202b) was found together with bones of cattle and sheep/ goat in clay at 2 m depth. Syse interprets these jointly as remains of a Viking Period cemetery. This may well be the case, but the two finds also show the challenges of the material. Both were found in wet areas where it is hard to distinguish a burial from a deposition. Such complexities are also noted for MAC 175, 176, 184.1-2, 202 a & b (see Appendix). These finds could be understood as evidence for deliberate deposition in water, but may on the other hand also derive from burials near the river shore.

Bengt Lundholm (1947) mentions human and animal bones found in River Björklingeån near Lövsta. These would be crucial to the discussion due to the site's proximity to both Valsgärde and Old Uppsala. However, no-one currently knows where these bones are. The excavation of a stone bridge at Läby bog, understood to date from the Late Iron Age, also gave finds of horse bones (Sernander 1908). Horse bones and undetermined bone fragments (UMF 3829) are registered in the museum as found at Läby Bridge, but the museum documentation is somewhat unclear. Furthermore three Viking Period axes (UMF

1112-14) have been recovered from Läby bog, and another axe (UMF 1118) was found during dredging of River Läby near the church, which suggests that this was a deposition site at least in the Viking Period.

Human and animal remains from c. AD 900-1200 have been found in three wetland localities: Närtuna, Knivsta and Bokaren, Earlier studies have dated a human skull from Närtuna to 890-1020 cal AD (Larsson 2007, p. 247). New dates for human skulls from Närtuna have produced similar and slightly later dates, such as 990-1150 cal AD (983±30 BP, 2 sigma). The dates from Knivsta are 780–1020 cal AD (1103±30 BP) and 1030-1200 cal AD (914±30 BP). At Bokaren a human skull dates to 970-1160 AD (Eklund & Hennius 2014). Pig bones from the same site date to 1120-1380 cal AD (726±30 BP, 2 sigma), which suggests re-use of the site in the Late Viking Period and into the Medieval Period. The radiocarbon dates from Knivsta and Bokaren indicate two depositional events at either site, while all the probability distributions for Närtuna overlap somewhat, allowing for contemporaneity.

Evidence for late deposition of human remains has also been found elsewhere in Sweden and abroad. Individual 37 from the wetland deposition of Skedemosse on Öland, for instance, is a c. 60-year-old female dated to 990-1150 cal AD (995±30 BP, 2 sigma; Olsson 2009, pp. 12 ff, tab. 1, fig. 4; Monikander 2010, p. 88 f). Furthermore, Glanshammar (understood as a potential central place in Närke; Ljungkvist 2006, pp. 75-84) has a nearby wetland weapon deposition site at Äversta that has yielded weapons dating to the Roman Period and the Migration Period (Nicklasson 1997, pp. 116, 275). The site has also given bones that have been dated by Tidens Vatten to the Migration/Vendel Periods as well as the end of the Viking Period (horse 430-610 cal AD, 1520 ±30 BP, Ua-4265; human 430-640 cal AD, 1508 ±30 BP, Ua-42657; human 420-590 cal AD, 1544 ±30 BP, Ua-42658; 890-1020 cal AD, 1087±30 BP, Ua-42659). In these cases earlier depositio-nal sites have attracted attention and been re-activated at the end of the Viking Period on the verge of the Medieval Period. These depositions suggest a reintroduction of sacrificial practices.

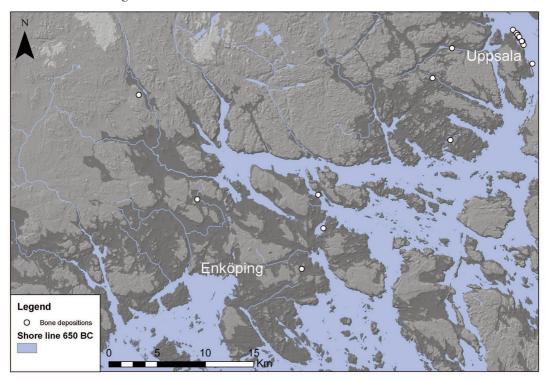


Fig. 2. Map of human and animal depositions around present-day River Örsundaån. Shoreline c. 650 BC, calculations after Sund 2010.

While further radiocarbon analyses of these finds may change the pattern, it is clear that some of the material dates to the transition between the Viking Period and the Middle Ages. Also, the locations where they occur, at a distance to Uppsala, are interesting. It seems that there was less emphasis on deposition at the central place, while the practice of depositing human and animal remains continued or was revived in more peripheral settings during these transitional times.

To what effect? Water boundaries as connectors We must contextualise the finds in greater detail and figure out the roles the depositions and the waters played in both geopolitics and water politics. Fredengren 2011 offers an overview of depositions of Bronze Age artefacts in the Lake Mälaren area. One conclusion of that study is that many of the hoard depositions, be they dry-land or wet-land depositions, were made where rivers met the sea and that they were carried out in a

maritime landscape, possibly linking rituals to longdistance journeys.

A similar observation can be made for the bone depositions, making use of a GIS map. The area around present day River Örsundaån would have been a bay of the sea (fig. 2). Some of the bone depositions were made at wet boundaries of rather rich Bronze Age settlements and in landscapes that would later become parish boundaries. These landscapes have been explored over decades of excavations. Fieldwork at Nibble in Tillinge has revealed complex settlements and funerary arrangements from 1100-300 cal BC. Particularly interesting are certain features suggesting that sacrifices took place within the settlements in connection with ancestral cult (Artursson et al. 2011, pp. 553-567). This is also an area with many rock carvings (Ling 2013). Jonathan Lindström (2011, p. 511 f; fig. 21:1) has summarised the archaeological evidence including bronzes, rock art and other sites. This part of the Lake Mälaren area had a number of large settlement areas. The bone depositions coincide with two of these areas, those of Enköping and Granhammar.

As discussed by Inga Ullén (2003), drawing on the evidence from Apalle, these areas would have had denser village-like conglomerations as well as single farms. At the Apalle settlement, bones were found in a well that may have been used both in Per. II/III of the Bronze Age and in the Pre-Roman Iron Age. While such wells contained and managed water, they could nevertheless be dangerous. Wells may draw on water percolating through the ground, and the depositions may have marked out, linked and handled the boundaries between the underworld and the everyday world.

The parishes of Biskopskulla and Härnevi are known for many Bronze Age sites and finds (Forsgren 2010; Lindström 2011; Ling 2013). The Per. III/IV bone depositions from Hjältängarna were found on the boundary between these parishes, in a borderland between areas that were frequently used during these periods. These bone depositions do not share the exact location of artefact depositions, although sharing the general locality. Note that these depositions contain unburnt bones from a time when increasing numbers of bodies were cremated and fragmented. It seems that different rules applied to the material destined for the water. There seems to be reason to re-think once singular finds, such as Granhammar Man, as playing roles in a broader depositional context.

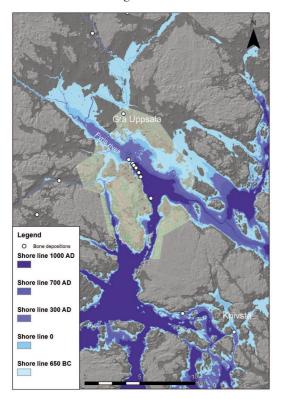
At River Tollense in Germany, finds of weapons and human remains with trauma have been interpreted as signs of a Bronze Age battle (Jantzen 2011). The finds from Uppland discussed here consists of a mix of human and animal bones in rather limited amounts and the osteological evidence does not yet support a battle interpretation for the finds from this period. However, these bones may have been useful in issues about contested lands and water. The finds derive from rivers and wetlands that were formerly waters. Particularly interesting are sites such as Knyllinge, where depositions were found at a ford. As discussed by Matt Edgeworth (2011), the flow of waters may intervene in political affairs. What is important to the discussion here is that Uppland's rivers, wetlands and lakes together with their

depositions may have been boundary makers, and thereby have become agents in territorial struggles. The depositions at Knyllinge can be understood as on the one hand marking out a water boundary, on the other hand working in conjunction with the particular water landscape as a meeting place and connector between areas and communities.

### Östra Aros and Old Uppsala

Judging from Camilla Sund's (2010) shoreline displacement model, the Uppsala area was an inlet of the sea that began to become land-locked from the beginning of the Iron Age on (fig. 3). During the Pre-Roman Iron Age the inlet reached Broby and Ärna near Old Uppsala. At the end of the Viking Period the inlet's shoreline had retreated to central Uppsala. As many scholars have noted, shoreline displacement was crucial to the social and political development of the area (e.g. Sundquist 1953; Anund 2000; 2008). These lands and waters clearly acted as significant co-workers in the politics of change by hindering certain kinds of transport by water and making new places available.

There has been much discussion about when Uppsala (as Östra Aros) was established and what its relationship to Old Uppsala was like. The location of the "true" Uppsala has been contested at least since the 17th century (Alkarp 2009). Nils Sundquist (1953, pp. 42-46, 66) described how early documentary evidence for Uppsala, such as Ynglingatal and Adam of Bremen, may or may not refer to Old Uppsala. Crucial to the linkage with Old Uppsala is the mention of a judicial assembly site and a market near the mounds in St. Olaf's Saga. Sundquist (1953, pp. 112-119, 122, 131–132, 136–137, 146, 174) instead favoured Östra Aros as the place discussed in the documentary sources. In about AD 1000 the river mouth was situated there. Sundquist pointed out that this area was associated with a fair at Islandet, that the topography here provides a better match with written sources, and there are significant wells in the area, such as one at the foot of Uppsala Castle hill and the well of St. Erik near the cathedral. Furthermore, he pointed out, the area has sacral place names that refer to the Norse pantheon, such as Ulleråker, most of them located on the western side of the river.



Both Sundquist and Lars Wilson (1994, p. 130) place the assembly site of Ulleråker hundred here, west of the river. Their argument points to three barrows that stood here once, and to a grave stone decorated with horses. Sundquist's work has been criticised for consisting of hypotheses rather than being built on archaeological evidence (Gräslund 1993; Kjellmark 2006; 2009), and the discussion has continued (Alkarp 1998; 2009; Anund 2000; 2008; Olof Sundqvist 2002; 2004; Ljungkvist 2006). The documentary sources suggest that the political emphasis certainly shifted from Old Uppsala, first when King Erik Jedvardsson was killed around AD 1160 at Östra Aros and then particularly in 1258 when the see was moved from Old Uppsala to Östra Aros and the later site was renamed Uppsala (Lovén 2010, pp. 271-279).

Sune Lindkvist (1936) focused on the main archaeological monuments at Old Uppsala and understood this to be the central place mentioned in the documentary sources. In more recent

Fig. 3. Map of human and animal depositions around present-day River Fyrisån and Uppsala. Shoreline c. 650 BC, calculations after Sund 2010.

times the project Gamla Uppsala - framväxten av ett mytiskt centrum has pieced together information from earlier excavations, as well as adding to the knowledge of the place though mapping and excavations (Ljungkvist 2013). John Ljungkvist (2013, p. 33) argues that it is rather clear from the archaeological evidence - plentiful settlement structures with central halls, monumental burials, artefacts of the most exclusive kind and evidence for craft production - that Old Uppsala was Svealand's main central place. The main period of monument construction there was AD 550-700 (Ljungkvist 2013, p. 57f) i.e. the Early and Middle Vendel Period. As emphasised by Ljungkvist (2006), Johan Anund (2008) and Zachrisson (2013, p. 190) we should discuss Old Uppsala in relation to other places and particularly to Östra Aros. The material in the present paper further emphasises the importance of this relationship.

Besides the monuments at Östra Aros indicated by Sundquist, a number of artefacts from the Stone Age onwards have also been retrieved there. For example, stone axes have been found in River Fyrisån and a quern stone was found in a well near the Bishop's palace. Certain Bronze Age artefacts may be associated with this stretch of the river, such as axes and spearheads known only to have been found in a garden somewhere along the river (SHM 2678). As noted above, a number of Viking Period artefacts have also been found just downstream from the Islandsbron bridge (Ljungkvist 2006, p. 177 f). One is a miniature sword (fig. 4). The area downstream from this bridge, Islandet, has been interpreted as a harbour location where people gathered from time to time (Gräslund 1993, p. 177). Ljungkvist (2006, pp. 176-178) rules out that the weapons would have ended up in the river as a result of accidental losses: the spot was not fordable. Furthermore he argues that the weaponry was not lost in battle, such as that around AD 980 at Fyrisvallarna (Syse 2003, p. 38 f), as there is a too wide a chronological spread in the weapon types, that date from c. AD 800 to 1100. Ljungkvist interprets the finds as a result of ritual depositions, possibly connected to war.

Dated depositions of human remains stretch back to Pre-Roman times at Östra Aros, However, most of the radiocarbon-dated bones have much later dates, similar to those of the weapon depositions. And they occur at nearby spots, further down along the river than the Pre-Roman find. The radiocarbon dates indicate that these people would have died in the Late Vendel Period and the Viking Period, while all the artefacts date to the Viking Period. This suggests that deposition of human remains began slightly earlier, but the standard deviations permit that all of the bones may be coeval with the weapon depositions. The radiocarbon results also imply that the depositions downstream from Islandsfallet were carried out after the end of the main monumental construction phase at Old Uppsala.

While Old Uppsala may have had a harbour location at some stage, shoreline displacement would slowly have altered the landscape and created more accessible harbour locations further down the river, for example at Östra Aros. Note that over time movement on land between Old Uppsala and Östra Aros would have become easier, while at the same time the water-borne passage became more arduous to travel. At an early stage the two places could work in conjunction, with the water facilitating direct contact. River Fyrisån once marked the boundary between Bondkyrka and Vaksala parishes, and so the Viking Period depositions were made at a point where two jurisdictions would meet in the High Middle Ages. Edgeworth (2011, p. 70) mentions how material and symbolic aspects of waters merge, and this would have been the case here too. The depositions were carried out at a spot where the river met the sea and where large ships could seek harbour. Thus there are similarities between the location chosen for the depositions and some of the earlier artefact depositions.

Comparable geopolitical dynamics are also seen at Gudme. It consists of the central settlement, 4 km from the coast and dating from c. AD 200-600, and settlement in the wider area from 100 BC to after AD 1100. However, it is often seen as forming a part of a wider settlement landscape incorporating the inland cemetery of Mølle-

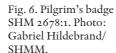
Fig. 4. Miniature sword found in River Fyrisån, UMF 1096. Photo John Worley, Gustavianum.



gårdsmarken and the trading port of Lundeborg, situated downstream at the mouth of River Tange å (Thrane 1987; Christoffersen 1987; Nielsen et al. 1994; Thomsen 1994; Jørgensen 1995; 2011; Hedeager 2011, pp. 153 f, 158). Hedeager (2011, 161 f, 165) suggests that Gudme was dedicated to the cult of Odin, where the central settlement area was seen as Asgard, the home of the gods, and the coast may have been associated with Utgard. Despite thorough investigations, no evidence for sacrifices has been found in or at Lake Gudme sø. This may however be due to heavy sedimentation in the lake. Instead cemeteries and hoards have been found either at the central settlement. in liminal wetlands or at spots closer to the sea. Here the situation at Gudme recalls that of Old Uppsala, with no evidence for the deposition of human or animal remains in wetland contexts. Instead the depositional evidence is found in an area where the inland waters met the sea, and associated with a harbour area. Therefore the location of these may both have drawn on traditional



Fig. 5. Medieval sword UMF 78 from River Fyrisån. Photo John Worley, Gustavianum.





depositional practices and negotiated a network of boundaries, between life and death as well as between territorial units and traditions.

Post-Viking artefact deposition in River Fyrisån There is no evidence to suggest continued deposition of human or animal remains in River Fyrisån past the end of the Viking Period. There are however rather plentiful finds that suggest continued artefact deposition in the river at presentday central Uppsala.

At least six Medieval swords have been found during dredging. Thomas Wagner et al. (2009) have published four and dated them to the 11-13th centuries, focusing on their high quality and religious/magical Christian inscriptions. The find context needs to be further explored. The sword SHM 8235 has a general provenance to River Fyrisån, while the swords UMF B 72, 74 & 78 were recovered from the river in the area around Islandsbron bridge and Hamnplanen (fig. 5). This find spot corresponds to that of the Viking Period artefacts as if depositional tradition continued into the Medieval Period. The sixth sword was found at the riverside near the bath at Pollacksbacken, hence also this was found in a water context.

Also recovered from the river are stirrups (UMF B652, 659, 660) and spurs (UMF 2114) of Medieval and later dates. Anund (2008, p. 9) interprets a Medieval horse figurine from the river shore as a possible sacrifice. Roberta Gilchrist (2009, p. 249 f) discusses the Medieval revival of the deposition of swords in watery contexts when they became obsolete in Christian burials. The custom worked to emphasise the link between masculinity and weapons in contestation with clerical identities. The Uppsala sword finds may be interpreted along similar lines. However, the

depositions in River Fyrisån are more complex and continue on in time, connecting horses, nobility and military action to the water, and thereby possibly recognizing, mediating and altering earlier traditions of horse-related bone depositions with new practices. Furthermore, the river has yielded a book clasp possibly dating from about AD 1300 and an early-15th century pilgrim badge of St. Bridget of Sweden (fig. 6). Larsson (2007, p. 242) mentions the find of a Medieval baptismal font from the harbour area and suggests that the harbour may at the time have reached Uppsala's main square, as evidenced by finds of boat parts at excavations. Boat parts were however re-used in buildings and pathways in Viking Dublin (Fredengren 2007), and they may also have been used as landfill. There are also other finds from River Fyrisån, including wool scissors (UMF 2113) and cutlery (UMF 2115). The distinction between what may have been sacred depositions and garbage is not always clear.

These river finds could be seen as accidental losses, but may equally imply that the depositional practices focused on water continued well into the Swedish Middle Ages. However, they would have changed. Thus it seems that Christian religious objects were also seen as suitable for deposition in water, even though they held a different religious charge. Christian devotional items such as book shrines and reliquary crosses have also been found at traditional deposition spots on rivers and in lakes in Ireland (Fredengren 2002; 2010, p. 256 f) and Denmark (Hede-ager 2011, p. 168) and this may also have been the case here.

The depositional practices in this part of River Fyrisån were long-lived. Religious practices relating to water continued into historical times, albeit in a different form, eventually including Christian items. This implies that the river contributed to more than the formation of masculine identities but also to negotiating between faiths. Furthermore, during the last fight of King Erik Jedvardsson, the future saint, two miracles occurred - a spring rose up either on the spot where his blood was first spilled or where he was decapitated, and the blood gave a blind woman her eyesight back. The location of the spring has been suggested as either at Uppsala cathedral or at Slottskällan, some 500 m to the south (Bengtsson & Lovén 2012, p.

24, 35 ff). The topos of the eye sacrificed in water occurs both in Norse and Celtic mythology as outlined in Simpson 1962. Note that the legend of St. Erik has a water-related theme, which also involves the killing and decapitation of the king. These motifs together with earlier practices may have been reworked in the legend of the saint.

#### Practices in the provinces

How then can we understand the pattern of depositions of human and animal remains as late as the end of the Viking Period? As shown above these took place in areas at a distance from Uppsala. The human remains at Lake Bokaren were found together with bones from cattle, horse and pig at a wood-and-stone platform. Flax and flax seeds were found at the site, which was understood as a sacrificial one, and the pollen spectrum in sediment samples suggested a date in the Middle Bronze Age (Lundholm 1947, pp. 21–24). Susanna Eklund and Andreas Hennius (2014) have radiocarbon-dated the human bones to the Vendel-Viking Period shift and the Late Viking Period. Further radiocarbon analyses carried out by Tidens Vatten and reported on here show that people continued to deposit animal remains at the platform well into the Swedish Middle Ages. However, the evidence needs further examination and more radiocarbon analyses may expand the site's use history.

Bokaren is on the boundary between Stavby and Rasbo parishes. The site is some 1,5 km northeast of Hov, where field survey has identified a substantial settlement and mound cemetery (e.g. Raä Rasbo 93, 668, 106:4). The place name Hov indicates a farmstead that may have had a sacral function (Vikstrand 2001, pp. 260-264; Sundqvist 2001). One possibility is that this Hov was a farmstead of a local or regional elite that had a sacral function. The human and animal sacrificial practices at Bokaren may have been related to this Hov, to other communities nearby or to alliances further away. Zachrisson (2014, p. 97 f) has identified an earlier lake name, Hofbo träsk, and interpreted the site as a regional outdoor cult site located on a hundred boundary.

The next set of depositions is from Närtuna parish. This is a find of several skulls and other human bones, together with wood and charred wood, some of it with cut marks, found during drainage of a peat bog that had once, like all bogs in the region, been a lake (Niklasson 1924). This lake was part of a transport route called Långhundraleden that lead from the Baltic Sea to Uppsala. Further survey and trial excavation took place and identified a built platform and indications of further assemblages of bones of humans and horses. The site was interpreted as a highly ranked sacrificial place (Larsson 2007, pp. 245-248; Zachrisson 2014, p. 100 f). The location is on the border of the three parishes Skepptuna, Närtuna and Frösunda. The latter two have theophoric names relating to the goddess Nerthus and the god Freyr (Vikstrand 2001, pp. 101-114). In the lake was once an island that is described as a meeting place and harbour location in the Heritage Board's site register (Raä Närtuna 176 & 178). This may well have been another regional centre (Zachrisson 2014, pp. 100 f) with importance both for communication and for pre-Christian religion. Närtuna, that also had a marketplace, is located along Långhundraleden and near Folklandstingstad, the legal assembly place of Attundaland at Lunda (Calissendorff 1966). This attests to the importance of the place. There is also evidence for the deposition of horse skulls in a nearby wetland at Stora Ullentuna, and animal bones have been found at a wood-and-stone platform at Tadem in Skånela parish. The Tadem platform dates to the

At Knivsta several individuals dating to the Viking Period and possibly somewhat later were found in a wetland on the present railway, near the church. The railway line cuts through two wet areas near Knivsta, Trunsta bog and the fen around St. Stephen's spring (Raä Knivsta 153). The latter is in the middle of Knivsta parish near the church, while the former is on the border with Alsike parish. Also from this general wetland area are bones from humans and cattle, pots and an iron knife (SHM 3492; these finds cannot currently be found in the stores and might be interpreted as evidence for burial, deposition or something in between).

Pre-Roman Iron Age (Olsson 1993).

At Knivsta there is a major Early Iron Age cemetery consisting of small mounds and standing stones (Ekholm 1946). Excavations have also identified settlements from the Late Bronze Age

and the Migration Period. There are furthermore burials from the Viking Period (Hamilton 1995). Excavations at Gredelby have turned up building foundations from AD 200 to 1050 (Andersson 1996, pp. 54-68). Nearby is Tuna in Alsike with an exceptionally rich boat-grave cemetery dating from the 6th century AD onward (Arne 1934), emphasising that this was an important centre. Birgit Arrhenius (1997) has suggested that this was the burial site of a ruling regional lineage connected to the cult of Freyja. In the vicinity of Knivsta, at Rickebasta, there are as mentioned above depositions of animal bones from the Bronze Age and Migration Period, which may be connected somehow to the high-status settlement at Alsike.

Some of these sites are near two- or three-parish boundaries. Hagberg (1967) noted Skedemosse's location between three parishes. This suggests that these sites were used by several groups for communal sacrifice. Likewise, Uppsala is mentioned as the place of the Swedes' top-level sacrificial feast. Other depositions may have been made in the context of local or regional events binding together other actors.

Lake Bokaren, Närtuna and Knivsta show that deposition of human remains in water took place in areas at a distance from Uppsala at the end of the Viking Period. One possibility is that a regional elite continued some sort of pagan blótrelated practices, at a time when the official establishment increasingly set them aside. There is reason to believe that these depositions took place in areas that had already previously been connected with sacrifices. Both at Knivsta with nearby Rickebasta and in Närtuna depositions had taken place earlier during prehistory. At Lake Bokaren there is evidence that human remains had been deposited at least during the Vendel and Viking Periods, if not earlier. Furthermore, animal remains dating to the Swedish Middle Ages have been found at the site, which is evidence for continued deposition.

The renewed deposition of human and animal remains in wetlands at the dawn of the Christian period and into it may have been an act of resistance against the royal line and religious conversion. There are some examples in the literary sources around this general time that suggest

a pagan revival. The Svear of Uppland seem to have held on particularly stubbornly to pagan traditions, including sacrifice (Sundqvist 2013, pp. 78-81). For example, the Saga of King Heidrek the Wise (p. 62 f) describes King Inge the Elder (obiit c. 1105) ordering the Swedes to abandon their pagan sacrificial customs in favour of Christianity. The people object and overthrow Inge. Instead Inge's brother-in-law, Sweyn, was made king on the promise that he would continue the sacrifices (Beckman 1925). The saga then describes how a horse was divided up and reddened the sacrificial tree with blood. After three years Inge overthrew Sven and was re-elected king. This suggests that there was a pagan uprising around AD 1080. The English bishop Eskil was apparently killed during these events (Schmid 1953).

Adam of Bremen's second book (ch. 62) also mentions Christians being killed in response to their missionary activities, and even describes their bodies being deposited in wetlands. After the English missionary Wolfred denounced Thor and destroyed a statue of the god, he was killed, dismembered and sunk into a bog, probably around AD 1029.

Furthermore, there was tension between Uppsala and Sigtuna in the 11th century (Sundqvist 2013, p. 81). The depositions should perhaps be understood against this background. As discussed by Anne-Sofie Gräslund (1997) and Torun Zachrisson (1998), Sigtuna was an important actor in the spread of the new faith. This is apparent in the area's many Christian rune stones. As expressed by Charlotte Fabech & Ulf Näsman (2008) and Stefan Brink (2012), the conversion process started long before AD 1100. Also, the continued deposition of human/animal remains and artefacts strengthens the impression that the conversion period stretched further on into the Swedish Middle Ages. As shown by Alexandra Sanmark (2004, p. 151) and Julie Lund (2010, p. 59), Medieval legal codes both in Scandinavia and Britain regulate worship at wells, which suggests that the sacrificial traditions continued, albeit in modified form. What has been presented in this paper is material evidence for how deposition in water, which may be a part of such worship, as well the varying acts of water, would have intervened in social and political affairs.

Discussion

In Uppland, the deposition of human and animal remains as well as artefacts in wetland contexts formed part of a long-lived, albeit varied, practice that stretched from the Bronze Age, through the Iron Age and into the Swedish Middle Ages. Most sites are in areas that would have been quite densely settled at the time, and have been found at lakes, rivers and bogs. Connections to fords and bridges emphasise their role in boundarymaking and boundary-transgressing practices. Some of these practices may later on have been expressed in Norse mythology, particularly texts dealing with depositions in wells, as recognised by Adam of Bremen. Possible they were also merged into later saints' lives. It is important to be open to the idea that religion saturated everyday life both before and after the advent of the new faith, and that deposition in water continued to be an important practice. Overall the amount of depositions in this area is higher than in nearby County Södermanland, which may suggest differences in politics, power practices and traditions.

Zachrisson (1998) and Hedeager (2011) show that artefact hoard deposition carried on well into the Late Iron Age and possibly even beyond, mainly however in the form of coin hoards. The wetland bone finds discussed here should be brought into this discussion, as they confirm the longevity of the tradition, and add bodily remains to the types of materials included in the discussion. Also artefacts such as swords, horse gear and religious items played roles in deposition in water for quite some time, where Christian artefacts were added to earlier depositions in River Fyrisån in the Iron Age and into the Middle Ages. This suggests that these waters continued to be of religious significance for quite some time.

Water, as a material force, has the power to intervene in political affairs. In this paper the workings of water as boundary and connector or the withdrawal of water due to rising land, facilitating for example new depositional places or harbour locations, have been touched upon. However, water can be a rather volatile partner. The depositions of bodily remains in waters can on the one hand be a way of hiding the evidence for events, but the withdrawal of water can also expose skeletal remains, revealing evidence for former practices. Such action could either attract continued depositional action or expose signs of atrocities and thereby call for intervention and revenge. Hence, water and skeletal depositions in conjunction could have effects in a variety of political causes. Sacrifice, violence and the deposition of bodies in wetlands mattered in religious and political affairs.

These depositions, together with the changing water landscape, played roles in geopolitics and water politics around the establishment, tensions, development and maintenance of central places such as Old Uppsala and Östra Aros. Furthermore, they may have been significant elements in the establishment and negotiations of boundaries. Particularly important is how these places may have been constructed by drawing on and modifying long-lived changing practices on the theme of human and animal deposition in water, stretching back to the Bronze Age.

As for the geopolitical situation, Uppsala may need to be understood as a changing complex of monuments and practices, being dependent both on relationships with nearby areas and developments at other places in the region and farther away. As Zachrisson (2013, p. 190) writes it is difficult to discuss Old Uppsala without considering Östra Aros. This perspective may be taken one step further with the material presented in this paper, to argue that the relationship between Old Uppsala and Östra Aros was a rather dynamic one over a long period, possibly, but not necessarily, drawing on an Asgard/Utgard model. However, it is clear not only from the sites and monuments, but also from the depositions of artefacts and human remains, that Östra Aros was a place to reckon with already during prehistory. The two places most likely worked from time to time in conjunction with each other, while at other times drifting apart both literally and physically due to the changing water landscape. There may have been a harbour near Old Uppsala early in its life, when the river was navigable up to this point, but due to shoreline displacement the harbour at Östra Aros then became more important. This watery location attracted depositions both of artefacts and bodily remains. Most of the human remains have been found in the harbour area downstream from the Islandsfallet rapids. This would have been an obvious place for public display to visitors. It is not yet known if human and animal sacrifice was carried out at Old Uppsala. However, the depositions at Östra Aros of both artefacts and human remains may be part of the reason for Uppsala's sacrificial reputation in the written sources.

These remains may have worked on a geopolitical level too, drawing attention away from Old Uppsala and placing the focus on Östra Aros in the transition between the Vendel and Viking periods. At Gudme, deposition of hoards as well as the dead took place in the coastal zone. It is worth noting that this is also the scenario acted out with many of the Bronze Age artefact depositions in the Lake Mälaren area, sited in coastal areas where rivers met the sea and possibly connected to long-distance journeys (Fredengren 2011). A significant portion of the human and animal remains were placed at spots that eventually became parish boundaries. These depositions of bodies can be seen as the result of necropolitical acts where the boundary between life and death was managed, and where water boundaries in the landscape became meeting places between regional actors as well as divine forces.

At the end of the Viking Period there was tension between those supporting the Christian faith and others in the provinces. There was friction between the Christian town of Sigtuna and Uppsala. Again, the deposition of human remains in wetlands may have been used to establish political platforms for rebellion. However, the geopolitical pattern is that deposition was carried out in areas away from the political centre of Uppsala. Radiocarbon dates from Knivsta, Bokaren and Närtuna point to a continued sacrificial practice in the 11th and 12th centuries, where human and animal remains played important roles. People also continued to deposit artefacts in watery contexts for a considerable time. Weapons, as before, but also Christian and other items dating after 1100 have been retrieved from these waters, suggesting that certain pagan practices continued on, transformed. However, there is no archaeological evidence for deposition of human or animal remains beyond the 13th century in this area. The last depositions seem to have occurred in areas were regional powers tried to revive the pagan faith - at the cost of both human and animal lives.

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# Appendix. Radiocarbon dates of human and animal remains from wetlands in Uppland.

Place	Museum reference	Date BP	Calibrated	Period	Comment
Gryteby in Vendel	MAC 172 Human	Ua-48742 3070±30	1420-1240 BC	P II/III	Human. Found at 0.5 m depth in bog.
Apalle in Övergran	-	-	-	P III/IV	Human, cattle, pig. From well with dates 1380–1300 cal BC & 150 cal BC. Ullén 1995; 2003
Hjältängarna in Vårfrukyrka/ Härnevi	SHM Pig	Ua-48743 2962±37	1280-1050 BC	P III/IV	Human, cattle, pig and horse bones found in bog.
Torresta in Västeråker	UM 20999b Horse	Ua-48744 2822±35	1120-890 BC	P IV/V	Human, cattle, horse and sheep/goat bones found in bog.
Hjältängarna in Vårfrukyrka/ Härnevi	SHM Cattle	Ua-48744 2821±35	1110-900 BC	P IV/V	See Hjältängarna above.
Granhammar in Västra Ryd	SHM 24965 Human	-	910-780 BC	PV	Human and sheep/ goat. Former lake bed. Lindström 2009, p. 60.
Torresta in Västeråker	UM 20999b Sheep/goat	Ua-49264 2671±32	900-800 BC	PV	See Torresta above.
Rickebasta in Alsike, Raä 52	SHM 28410 Cattle	Ua-49846	790-410 BC	P V – IA 1	Horse, cattle, pig found in bog.
Rickebasta in Alsike, Raä 52	SHM 28410 Horse	St-2350	720-620 BC	P V/VI	See above.
Knyllinge in Fröslunda, Raä 98	SHM 34715 Horse	Ua-48790 2225±35	380-200 BC	IA 1/2	Horse and dog. From ford with LBA wooden bridge.
Sätra in Uppsala-Näs	UM 1140 Human	Ua-43163 2208±30	380-190 BC	P 2	Human. Drainage ditch in old bed of Lake Sätrasjön.
Kv. Rudan, Fyrisån, Uppsala	MAC 183 Human	Ua-43161 2177±30	370-160 BC	P 2	Human. Found at River Fyrisån, "deep in the clay very near the river".
Knyllinge in Fröslunda, Raä 98	SHM 34715 Dog	Ua-48789 2017±36	150 BC - AD 70	P 3	Horse & dog. See Fröslunda above.
Tadem in Skånela, Raä 23:2	SHM dnr 5848/89 Horse	St-12270 1875±70	180 BC - AD 210	P <sub>3</sub> /RIA	Olsson 1993; Larsson 2007, p. 248.
Torresta in Västeråker	UM 20999b Human	Ua- 49263 1896±32	AD 20-220	RIA B/C	See Torresta above.
Stora Ullentuna in Skepptuna, Raä 327	Horse	-	c. AD 100	RIA B/C	Estimated date from parallel find at Tadem.

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Place	Museum reference	Date BP	Calibrated	Period	Comment
Kyrsta in Ärentuna	Human	-	c. AD 150	RIA B/C	Human, cattle, pig, horse, sheep/goat and dog found in well. Eklund et al. 2007.
Gödåker in Tensta	SHM 17963 Human animal	-	AD 100-400	RIA B/C	Human, cattle and dog. From well, contextual date? Ekholm 1925.
Rickebasta in Alsike, Raä 52	SHM 28410 Horse	Ua-49845 1564±33	AD 410-570	Mig / Vendel	See Rickebasta above.
Lake Bokaren in Stavby	SHM 274526 / UM Human	Ua-48671 1282±34	AD 650-810	Vendel	Human, horse and pig. Found in wetland with platform. Eklund & Hennius 2014.
Below Islandsbron bridge, Fyrisån	MAC 179 Human	Ua-20083 1220±45	AD 680-850 (930-940)	Vendel (Viking)	Human. Found on river shore with boat & spears during drainage. Syse 2003, p. 34.
Föret, Fyrisån, Uppsala	MAC 181 Human	Ua-43160 1174±30	AD 770-970	Viking	Human. Found while dredging River Fyrisån with other humans from site MAC 177, 182. See Bokaren above.
Lake Bokaren in Stavby	SHM 274526 / UM Human	Ua-48670 1005±30	AD 970-1160	Viking	
Hederviken in Närtuna	SHM 17559 Human	Ua-42661 1103±30	AD 890-1010	Viking	Human and horse. Found in wetland, possible platform.
Hederviken in Närtuna	SHM 17559 Human	Ua-42659 1087±30	AD 890-1020	Viking	See above.
Hederviken in Närtuna	SHM 17559 Human	Ua-23076 1075±40	AD 890-1020	Viking	Larsson 2007, p. 247.
Hederviken in Närtuna	SHM 17559 Human	Ua-42660 983±30	AD 990-1150	Viking	See above.
Knivsta träsk in Knivsta	MAC 194 Human	Ua-48741 1103±30	AD 780-1020	Viking	Human. Found in wetland with several other humans from site MAC 192-193, 195, 197.
Knivsta träsk in Knivsta	MAC 191 Human	Ua-43162 914±30	AD 1030-1200	Viking	See above.
Lake Bokaren in Stavby	SHM 274526 Pig	Ua-49245 726±30	AD 1220-1380	Medieval	See above.
Rickebasta in Alsike, Raä 52	SHM 28410 Pig	Ua-49847 178±34	AD 1640-1960	Modern	See above.

## Currently under examination

Ekeby Burehäll in Riala. Mainly cattle and sheep/goat from ford. Pers. comm. Kjell Andersson, Arkeologistik AB.

## Not dated or uncertain contexts

River Örsundaån in Altuna	Raä 60:1	Human and animal remains from timber structure on river during dredging (Larsson 2007, 241), not located.
River Björklingeån, Lövsta in Bälinge	-	Human and animal remains from river (Lundholm 1947), not located.
Knivsta/Segerstad in Knivsta	SHM 3492	Human and animal remains from wet context, not located.
Lake Hallabysjön in Litslena	Raä 465 & 600	Human skulls from former bog/lake.
Läby bridge in Läby	UM 3829	Horse bones, unclear documentation.
Kaubashuset? Fyrisån, Uppsala	U11	Human remains from dredging of Fyrisån, at mouth of river near ?Kaubashuset?, not located.
Eastern shore of River Fyrisån in Uppsala	MAC 175	Human remains found at Tullgarns mekaniska verkstad, between clay and marl sediments, 100 feet from river, not located.
Eastern shore of River Fyrisån in Uppsala	MAC 176	Human remains found at Tullgarns slakteri, 10 feet underground, Ua-43159 (1274±30) AD 670-870.
River Fyrisån in Uppsala	MAC 177	Human remains from dredging of Fyrisån, not located.
River Fyrisån in Uppsala	MAC 180	Human remains from dredging of Fyrisån, opposite to Kungsängsesplanaden, not located.
River Fyrisån in Uppsala	MAC 182	Human remains from Fyrisån across from Flustret, not located.
Eastern shore of River Fyrisån in Uppsala	MAC 184. 1 & 2	Human remains (Syse 2003, p. 35 f), Östra Ågatan, Kv. Näktergalen, uncertain context, could be wet, dry or both.
River Fyrisån in Uppsala	MAC 185 MAC 186	Human remains probably from dredging of Fyrisån, not located.
Wetland in Knivsta	MAC 192-3, 195-7	Human remains from wetland near Knivsta church, not located.
Shore of River Fyrisån in Uppsala	MAC 202 a & b	Human and animal remains from Trädgårdsgatan 10, (Syse 2003, p. 36), uncertain context – could be dry, wet or both.
Hospitalet, River Fyrisån, Uppsala	MAC 206. 1-3	Human remains interpreted as possible drownings in museum ledger, only MAC 206.1 located.
River Fyrisån in Uppsala	MAC 514	Human remains from dredging of Fyrisån, not located.