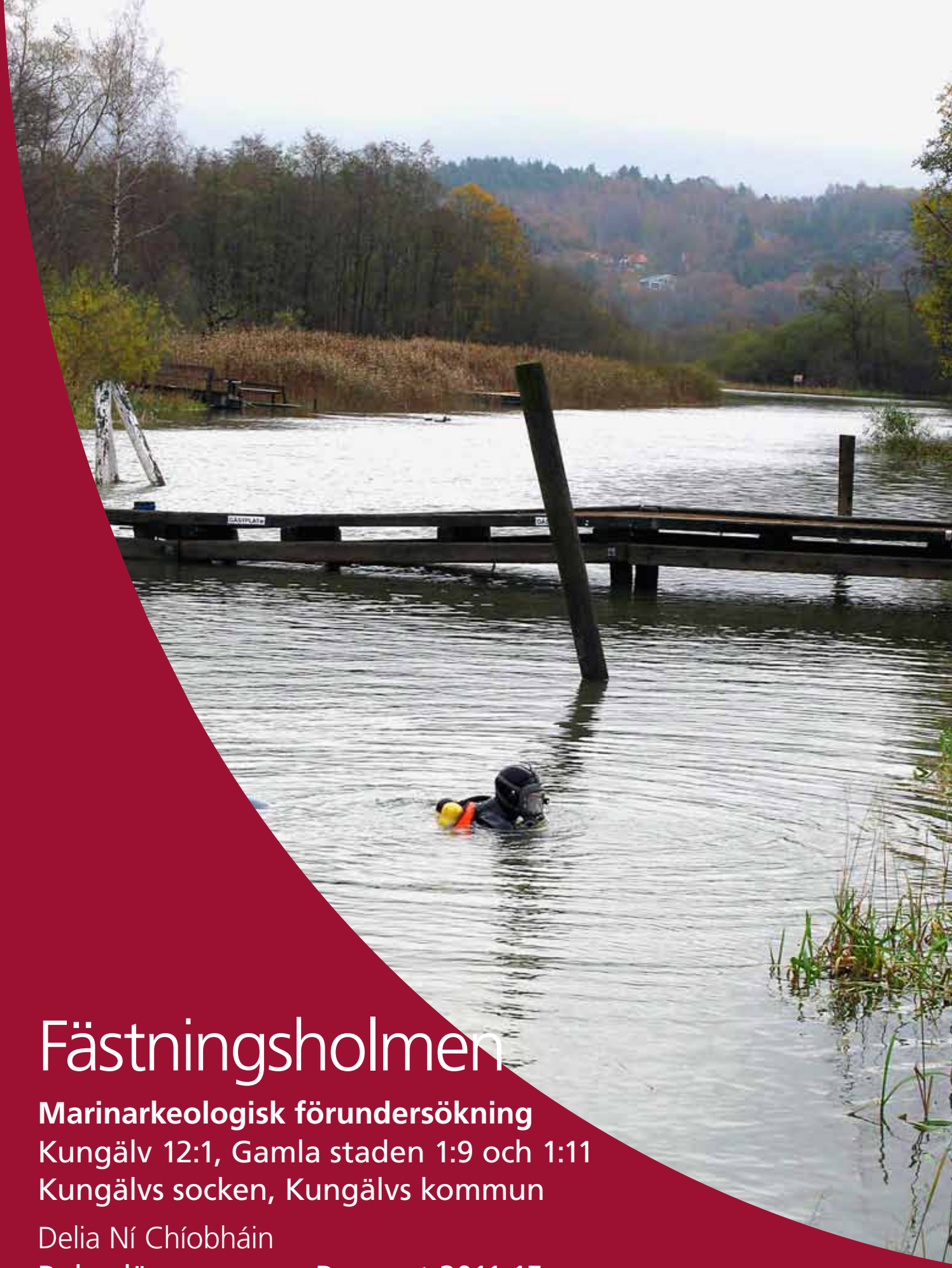

# Fästningsholmen

**Marinarkeologisk förundersökning**
Kungälv 12:1, Gamla staden 1:9 och 1:11
Kungälvs socken, Kungälvs kommun

Delia Ní Chíobháin

**Bohusläns museum Rapport 2011:15**

BOHUSLÄNS MUSEUM

# Fästningsholmen

Marinarkeologisk förundersökning

Kungälv 12:1, Gamla staden 1:9 och 1:11, Kungälvs socken, Kungälvs kommun

Bohusläns museum Rapport 2011:15

BOHUSLÄNS MUSEUM

VÄSTRA GÖTALANDSREGIONEN
VÄSTARVET

ISSN 1650-3368
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**Layout och teknisk redigering** Lisa K Larsson
**Omslagsbild** Foto taget av Staffan von Arbin. Fotot visar Nordre Älv mot öst
**Tryck** Bording AB, Borås 2011
**Kartor ur allmänt kartmaterial, © Lantmäteriverket medgivande 90.8012**
**Kartor godkända från sekretessynpunkt för spridning** Lantmäteriet 2010-11-02. Dnr 601-2010/2731

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# Innehåll

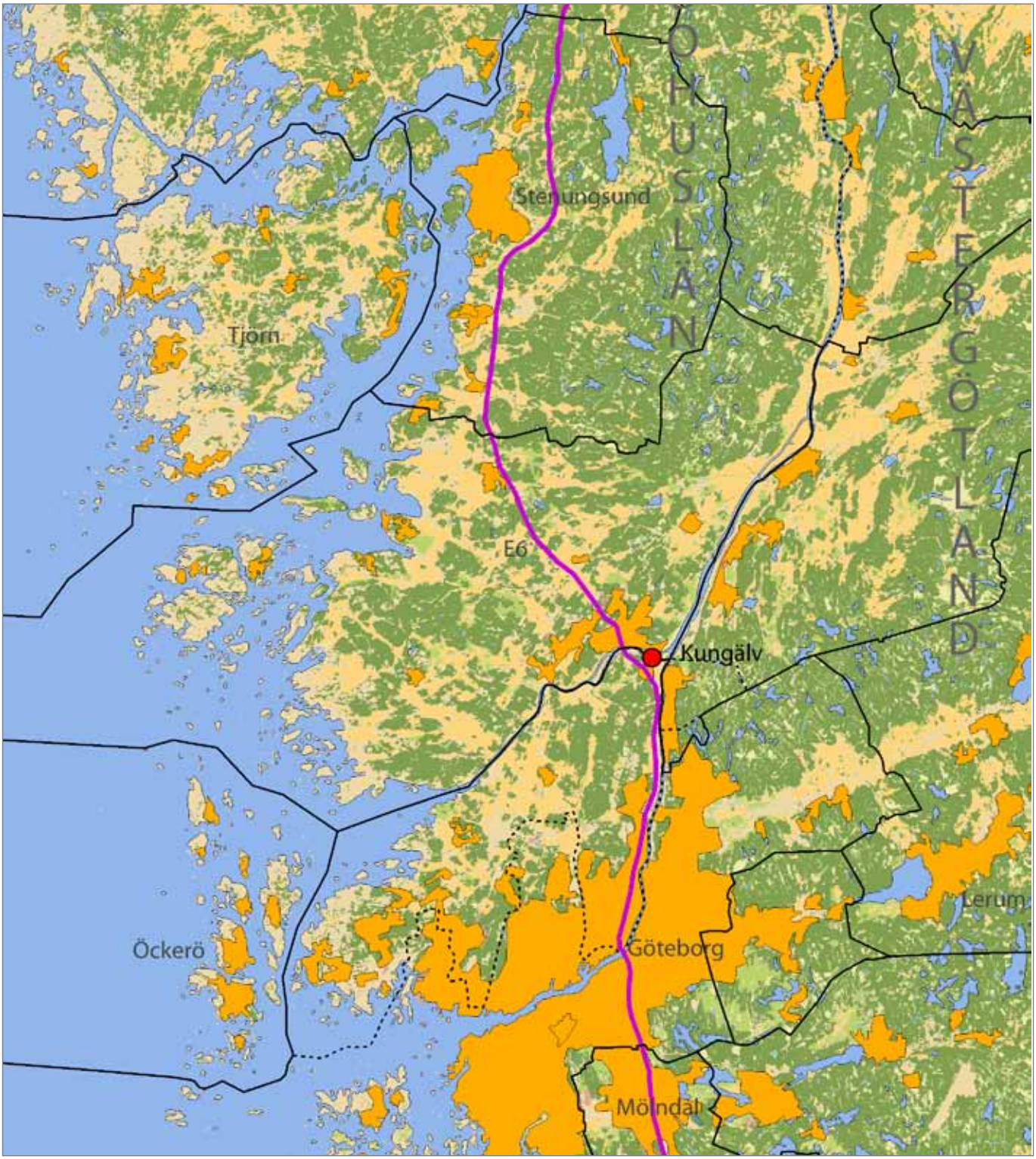


*Figure 1. Section of GSD-Property map with the location of the investigation area marked.*

*Figur 1. Utsnitt ur GSD-Röda kartan/Fastighetskartan med platsen för undersökningen markerad.*

# Svensk sammanfattning

Under oktober och november månad 2010 genomförde Bohusläns museum en marinarkeologisk förundersökning av fornlämning Kungälv 12:1, vilken är stadslager på Fästningsholmen vid Bohus fästning, Kungälvs kommun, Västra Götalands län. Förundersökningsområdet omfattade cirka 3 800 kvadratmeter av Nordre älv, inom den del som omsluter Fästningsholmens norra sida. Förundersökningen föranleddes av en planerad ombyggnation av den befintliga marinan för fritidsbåtar. Uppdragsgivare var Gatukontoret i Kungälvs kommun. Projektledare var Thomas Bergstrand medan rapporten är författad av Delia Ní Chíobháin.

Förundersökningen genomfördes medelst okulär besiktning av dykande arkeologer, provgropsgrävning samt sökschaktning med grävmaskin. Resultatet var begränsat och omfattade framför allt fynd av tegelfragment samt en klen träpåle i den västra delen av undersökningsområdet. Träpålen daterades med $^{14}$C-analys till perioden 1730-1810 e. Kr. (2 sigma). Enligt uppgift skall området för den befintliga marinan ha blivit muddrat år 1958, en händelse som kan förklara det klena arkeologiska resultatet. Efter genomförd förundersökning har Bohusläns museum ingen vidare antikvarisk erinran mot det planerade arbetsföretaget.

# Background

In response to the proposed dredging operations by Kungälvs kommun on the northern extent of Fästningsholmen in Kungälv, Bohusläns museum conducted a preliminary marine archaeological investigation (figures 1 – 3). The investigation was carried out over a number of days in October and November 2010. The investigation area is located within Kungälv 12:1, which contains cultural layers dating from the medeival and early modern periods. The island also contains Bohus fästning, dating to 1308, which was in use for 500 years and was subjected to many attacks and sieges during this time. The investigation was carried out in an area of water currently used as small boat marina (figure 4). This site is said to have been the location of a pier built by merchants in 1618. The pier was said to have been built with 8 to 10 stone caisson foundations and with oak structures above water (Berg 2007:62).

The investigation included visual searches and probing of the river bed, followed by test trenches excavated by diving archaeologists. The dredging yielded many modern finds and as a result a further series of trenches were dug using an excavator machine. A wooden pole, dated to between 1730 and 1810, was located in one of the dredging trenches, along with 2 shards of ceramics. The excavator trenches yielded very little archaeological evidence. The area was said to have been dredged extensively in 1958 prior to the construction of the present boat marina and this may be a contributing factor in the low presence of archaeological features and cultural layers as are evident on other areas of Fästningsholmen.

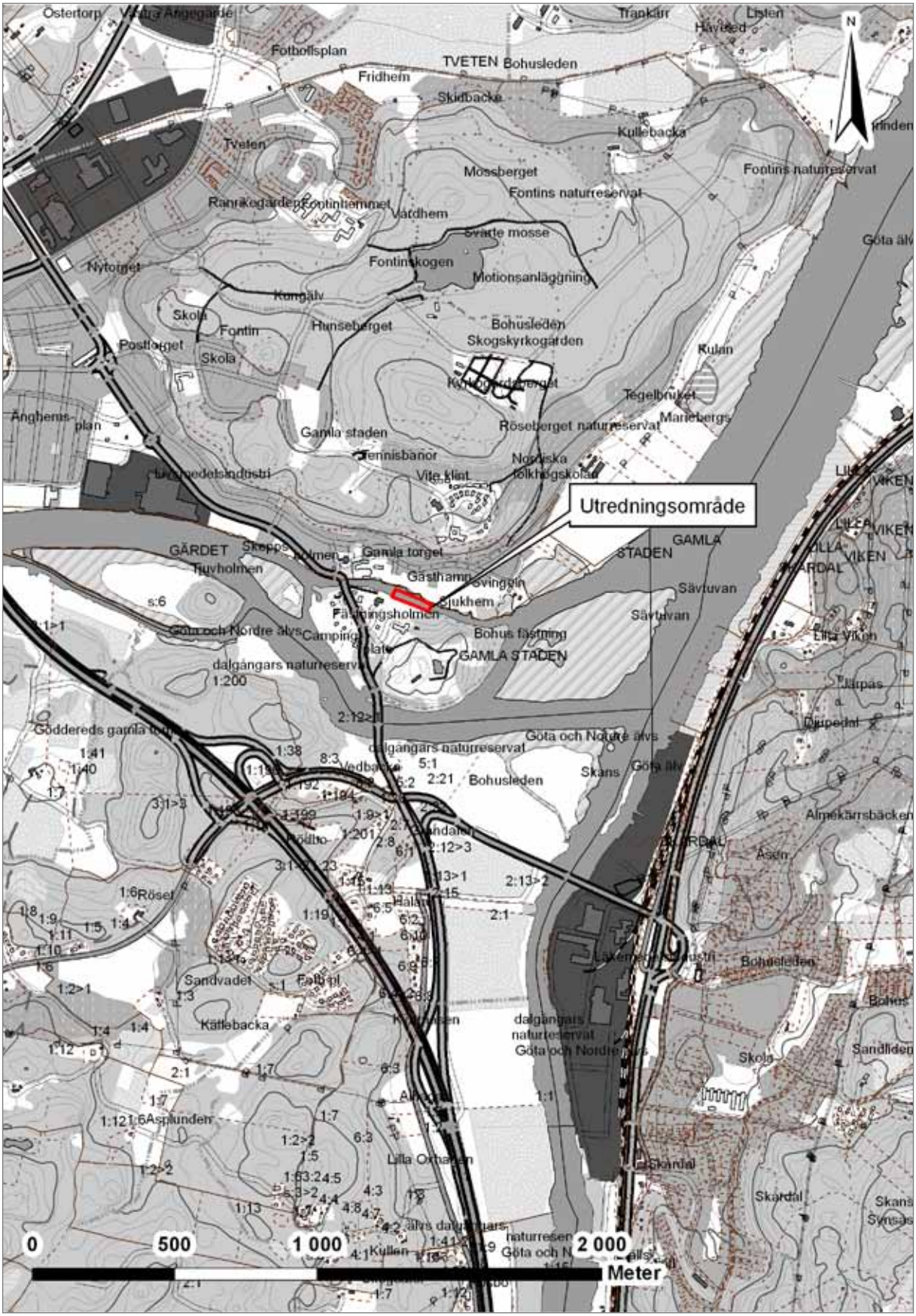


*Figure 2. Section of GSD-Property map with the location of the investigation area marked. Scale 1:20 000. Permission for distribution approved by the Security Officer. Lantmäteriet 2010-11-02. Dnr 601-2010/2731.*

*Figur 2. Utsnitt ur GSD-Fastighetskartan med platsen för undersökningen markerad. Skala 1:20 000. Godkänd ur sekretessynpunkt för spridning. Lantmäteriet 2010-11-02. Dnr 601-2010/2731.*

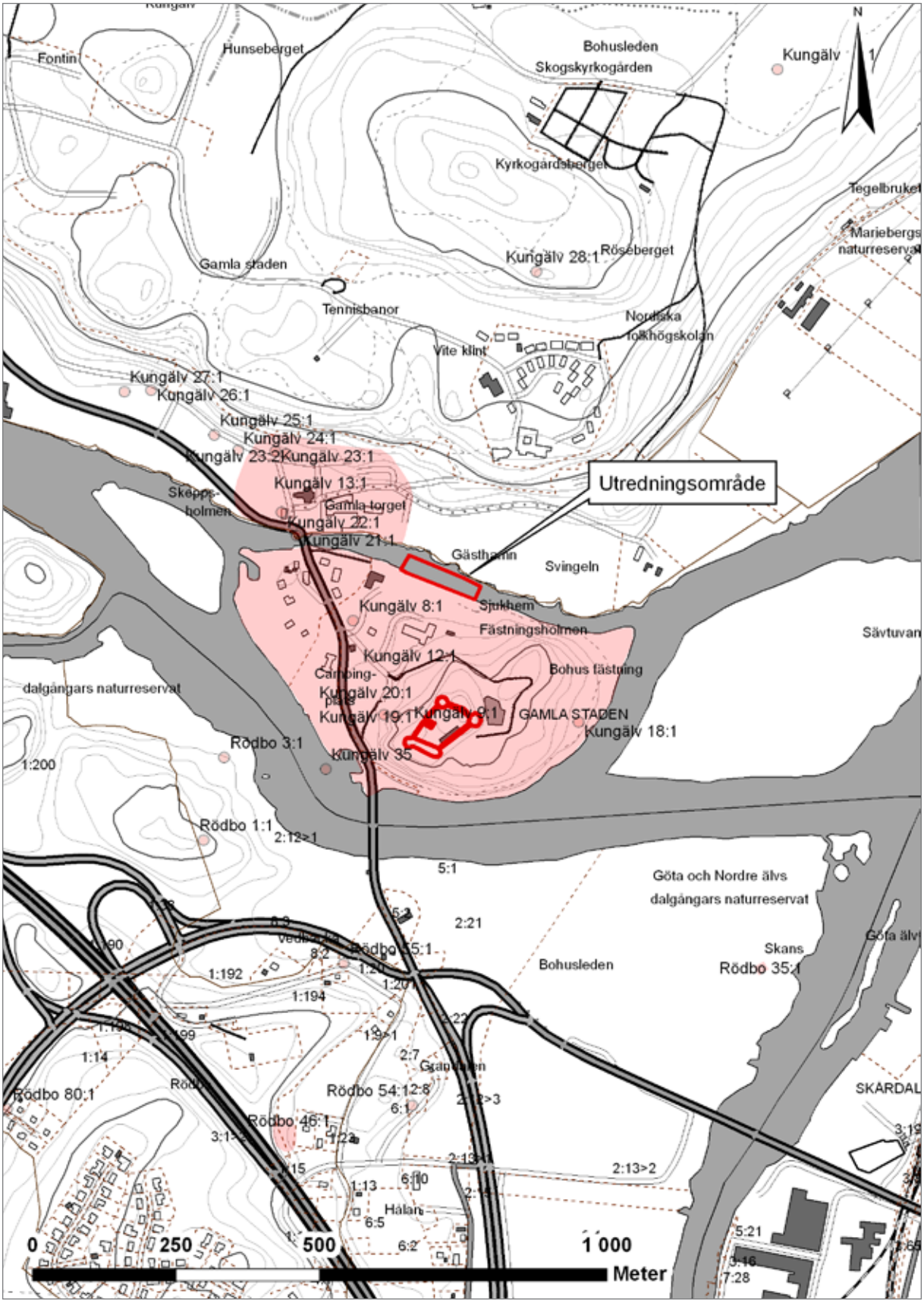


*Figure 3. Section of GSD-Property map, sheets 7B 4e, with the investigation area and nearby ancient remains marked. Scale 1:10 000. Permission for distribution approved by the Security Officer. Lantmäteriet 2010-11-02. Dnr 601-2010/2731.*

*Figur 3. Utsnitt ur GSD-Fastighetskartan, blad 7B 4e, med översikt över undersökningsområdet samt närliggande fornlämningar markerade. Skala 1:10 000. Godkänd ur sekretessynpunkt för spridning. Lantmäteriet 2010-11-02. Dnr 601-2010/2731.*

# Landscape

## Natural landscape

Kungälv is located 22 km north of Göteborg and 20 km inland to the east. The town is at the confluence of the Nordre älv, the river which runs northeast-southwest and the Göta älv running north-south. Fästningsholmen is one of a number of islands within the confluence and connected by bridges to Hisingen island in the south and Kungälv town in the north. The altitude on the island contrasts from 29 meters in the southeast on the hill where Bohus fästning, Kungälv 9:1, is built, to the shoreline. The water depth varies around the island from 3 to 4 meters in the Nordre älv along the north to 10 meters along the eastern and southern extents and 14 meters to the west. The Nordre älv current is strong to the north of the island, where the investigation area is located. The mountain Fontin is located on the mainland to the north with an altitude of 90 meters. The natural forests on Fontin were devastated after a series of siege events in the 1500 and 1600s and the area was reforested in the late 1800s.

## Cultural landscape

Bohus fortress was built in 1308 by the Norwegian King Håkon V Magnusson on Fästningsholmen, which was called Bagaholmen at the time, when Bohuslän was a part of Denmark-Norway. An earlier castle was built to the west of Kungälv on Ragnhildsholmen but was subsequently abandoned for the current location. The first castle on the site was built of wood but already by 1320 there are references stating that the castle had walls and buildings of brick and granite. Over the following centuries the castle was rebuilt a number of times. Before the advent of firearms it was enough that the river formed a moat as defence but as guns became more widely used the walls were further reinforced and bastions were constructed (Lundgren 2001:60).

One advantage of Fästningsholmens location on the confluence of the Nordre älv and Göta älv rivers meant that it was an excellent vantage point from which to control shipping in the area and enforcing tolls to passing Swedish ships, an act which was also carried out when the castle on Ragnhildsholmen was in use (Johansson 1984:14).

In 1613 Christian IV of Denmark-Norway rebuilt the medieval castle in the renaissance style and the city of Kungälv was relocated to the island (Ny-Kongelf), the older city having been burned down. The town received trading privileges in 1621 and inhabitants of the town had exclusive trading rights, with timber being mentioned as once of the first items for trade. From even before this time timber was an important commodity traded, as there was a strong need for castle and shipbuilding timber in Denmark and Western Europe at the time. The king issued a decree that each year all ships were to sail to Copenhagen with

timber, something that merchants attempted to avoid. In fact Christian caused much trouble for merchants as his various wars had a negative impact on trade as taxes were raised and depending on the political climate at the time, they were at times forbidden to trade with certain cities (Berg 2007:57).

Christian commissioned several ships to be built to defend the area; a warship was commissioned in 1619, in 1629 ships were to be built to defend the area and were to be at least 120 *läster*, the larger merchantmen at the time were 40 *läster*. These were most likely built at a shipyard on the mainland site (Berg 2007:60-62).

The area to the north of the island where the marina is currently located, Damen, was used in the 1600's as wharf for loading and unloading of goods. In 1618 merchants built an oak pier called Langegrugge. The pier began by Rännelen and followed it east. It consisted of eight to ten stone caisson foundations with oak planks on top. In 1631 the repairs to the pier required oak materials measuring 170 *alnar*, which would equate to ca. 100 meters, suggesting a structure of significance. To gain access to the pier ships would have passed through Högebro and to the east the area was well protected by poles with narrow openings that could be closed for defensive purposes (Berg 2007:62).

As well as timber and herring, other items traded in Kungälv, were horses, oxen, hides, butter and *osmundjärn,* and iron of unequal quality. Items imported included salt, hemp, cloth, along with luxury items like spices, games, tobacco and pipes from countries along the North Sea and the Baltic Sea (Berg 2007:63-64).

*Figure 4. View investigation area facing east. Photo: Staffan von Arbin, Bohusläns museum.*

*Figur 4. Utredningsområdet åt öster. Foto: Staffan von Arbin, Bohusläns museum.*

## Ancient monument environment & previous investigations

The island of Fästningsholmen contains Bohus fästning, Kungälv 9:1, and extensive cultural layers, Kungälv 12:1, dating from the medieval period. The cultural layers extend to the north across the strait to where the city of Kungälv is today and are dated from the 1600s.

For nearly 500 years Bohus fästning was of major strategic importance to the ruling powers in Scandinavia, fulfilling a number of roles during its time of use, while controlled by Norway, Denmark and Sweden at different times. It served as a royal residence, a centre of administration, a border fortress providing military support and in later years as a prison. From the year 1482 Bohus fästning was subject to 14 separate sieges in attempts to gain control, six of these occurring during the Nordic Seven Years war, 1563-70 (Lundgren, 2001:63).

The final and most powerful siege attempt took place from June 1 to July 21 in 1678 after Bohuslän had become Swedish following the Treaty of Roskilde in 1658. Ulrich Frederik Gyldenlöwe led about 15 000 Norwegian and German soldiers in an attempt to capture the fortress. Defending it were 900 Swedish and Finnish men under the command


*Figure 5. Plan of investigation area with test trenches and location of A1 marked. Section of GSD-Property map, sheets 7B 4e, with the investigation area and nearby ancient remains marked. Scale 1:500. Permission for distribution approved by the Security Officer. Lantmäteriet 2010-11-02. Dnr 601-2010/2731.*

*Figur 5. Plan över undersökningsområdet med provgropar och A1 markerade. Utsnitt ur GSD-Fastighetskartan, blad 7B 4e, med översikt över undersökningsområdet samt närliggande fornlämningar markerade. Skala 1:500. Godkänd ur sekretessynpunkt för spridning. Lantmäteriet 2010-11-02. Dnr 601-2010/2731.*

of Fredrich von Borstel and Carl Gustav Frolich. Over the course of two months using 43 guns and 12 mortars, between 20 000 to 30 000 cannon balls were directed at Bohus fästning from the enemy's locations on Fontin and Hisingen, along with bombs, rocks, grenades and fecal matter in an attempt to spread disease among those defending the fortress. Attempts were also made to detonate bombs along the walls of the

fortress and while it was close to falling in to enemy hands, a Swedish reinforcement under Reich Admiral Gustav Otto Stenbock prevented this. Following the Gyldenlöwe attack the fortress was once again renovated but fell into decline in the 1700s and like many Bohuslän fortifications was used as a prison until it was decommissioned in the late 1700s (Berg, 2006: 34-36).

While Bohus fästning and the cultural layers on Fästningsholmen and in Kungälv have been studied, there have not been any archaeological investigations in the waters around Fästningsholmen. There are four known shipwreck sites along to the south of the island with the working names of Fästningsholmen 1-4. One of these, *Fästningsholmen 2*, is a registered monument, Kungälv 35. It was initially investigated by divers of the *Göteborg Amatördykarklubb* in 1953 who uncovered part of the ship's hull. The vessel is a flat-bottomed and is carvel built of oak. In the spring of 2009 timber samples for dendrochronological analysis were taken from the wreck and give a building date of the early 1600s.

*Fästningsholmen 1* is a clinker built vessel of oak measuring just over 20 meters long. Bricks located at the wreck site indicate a medieval date however it is also possible that it derives from the 1530s. The King granted permission to the Lord of Bohus to reinforce the fortress using bricks from an older Franciscan monastery in Kungahälla. It is possible that the wreck constitutes a shipment of these bricks to Fästningsholmen. Roof tiles (*taktegel*) were also part of the cargo and were associated with monasteries and convents during the Medieval Period. Divers have also reported finding shards of historical ceramics in the Nordre älv off Fästningsholmen, dating to the 1200s or 1300s.

# Method

The planned development area is located within the existing marina on the northern shore of Fästningsholmen and measures approximately 150 meters and extends 25 meters into the river. The area was visually inspected and probed for archaeological remains by diving archaeologists. There followed a series of ten test trenches (figure 5) at intervals within the investigation area measuring on average 0,5 × 0,5 m and 0,6 m deep.

The poor visibility caused by recent rainfall and strong current in the Nordre älv hindered the visual inspection. The test trenches were dug as deep as was possible yet revealed mostly modern finds in the deepest areas. As a result a further series of trenches were excavated using an excavator machine. Four trenches were excavated along the shoreline, measuring on average 0,7 × 0,7 m and 1 meter deep.

All diving was carried out with tethered surface supplied diving and diver-surface communications in accordance with the Work Environment Authority´s (*Arbetsmiljöverkets*) regulations of commercial diving (AFS 1993:57) and the diving standards of Bohuslän museum. Archaeological features and trench locations were positioned by means of DGPS.

# Results

The visual inspection revealed a single shard of recent pottery. The probing of the riverbed did not reveal any specific areas of interest as the soft sediment was deep. The test trenches were situated at intervals between the boat jettys of the marina (appendix 1). Results of the dredged test trenches included another shard of modern ceramic and a wooden pole located 30 cm beneath the sediment.

The pole (figure 6) measured 90 cm in length with a diameter of 6 cm. A further trench was excavated adjacent to its location but this did not yield any finds. Carbon dating of a fragment of the pole was conducted at Ångströmlaboratoriet, Uppsala University (appendix 2). The $^{14}C$-analysis yielded a result of 220 +/- 30 BP, which calibrated (2 sigma) provides a dating range from 1640-1960, with a greater probability of the period 1730-1810 (44,5%).

The area surrounding the small boat marina is said locally to have been dredged extensively in 1958 prior to the construction of the marina, which may explain the low occurrence of cultural layers or boat finds.

# Conclusions and proposals for action

Considering Bohus fästnings long and eventful role in the history of Bohuslän and it's extended use, it was surprising that this investigation did not result in more archaeological evidence in the form of cultural layers or port facilities. One reason for this may be due to the area having been dredged at the time of the marinas construction in the 1958, with the dredged material being used to fill in the area which now contains a car park. The dating of the pole located in trench 2 to the 1700s or early 1800s. As the visual survey and test trenches revealed remains of low archaeological importance in the proposed dredging area, Bohusläns museum have no archaeological comments to make on the proposals.

*Figure 6. A wooden pole located in test trench 2. Photo Delia Ní Chíobháin, Bohusläns museum.*

*Figur 6. Träpåle från provgrop 2. Foto Delia Ní Chíobháin, Bohusläns museum.*

# References

## Literature

Berg, K. (red) 2007. *Fästningsholmen.* Kungälv: YC Bokförlag.

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*Dykeriarbete*. AFS 1993:57. Arbetarskyddsstyrelsen. Stockholm.

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Lundgren, E. 2001. *Kungälv, liv och kultur under 900 år: en vänbok.* Kungälvs kommun.

# Technical and administrative data

| | |
|---|---|
| **Lst dnr:** | 431-9875-2010 |
| **Västarvet dnr:** | NOK 630-2010 |
| **Västarvet pnr:** | 10152 |
| **Fornlämningsnr:** | Kungälv 12:1 |
| | |
| **Län:** | Västra Götalands |
| **Kommun:** | Kungälv |
| **Socken:** | Kungälv |
| **Fastighet:** | Vattenområde inom Gamla staden 1:9 & 1:11 |
| | |
| **Ek. karta:** | 7B 4e |
| **Läge:** | X 6417508, Y 321974 |
| **Vattendjup:** | 0,5 till 3,0 m |
| **Koordinatsystem:** | Sweref 99 TM |
| | |
| **Uppdragsgivare:** | Kungälvs kommun |
| **Ansvarig institution:** | Bohusläns museum |
| **Projektledare:** | Thomas Bergstrand |
| **Fältpersonal:** | Staffan von Arbin, Thomas Bergstrand, Delia Ní Chíobháin |
| **Konsulter:** | Ångströmlaboratoriet, Uppsala |
| | |
| **Fältarbetstid:** | 26-28 oktober, 12 november 2010 |
| **Arkeologtimmar:** | 72 |
| **Undersökt yta:** | 3 800 $m^2$ |
| | |
| **Arkiv:** | Bohusläns museums arkiv |
| **Fynd:** | Inga fynd omhändertogs |

# Appendices

Appendix 1. *Test trenches and finds*

Bilaga 1. *Provgropar och fynd*

Appendix 2. *Results from $^{14}C$ dating of wood from Kungälvs kommun, Götalands län. Ångströmlaboratoriet, Uppsala university. Lab number Ua-41189. Göran Possnert and Ingela Sundström*

Bilaga 2. *Resultat av $^{14}C$ datering av trä från Kungälvs kommun, Västra Götalands län. Ångströmlaboratoriet, Uppsala universitet. Labnummer Ua-41189. Göran Possnert coh Ingela Sundström*

## Bilaga 1. *Provgropar och fynd*

| Provgrop id | Vattendjup/ meter | Beskrivning | Fynd |
|---|---|---|---|
| PG 1 | 1,3 | 50×50cm stor, 60cm djup | Inga fynd |
| PG 2 | 2,2 | 1m×50cm stor, 50cm djup | Påle, keramikfragment |
| PG 3 | 1,5 | 50×50cm stor, 40cm djup | Inga fynd |
| PG 4 | 1,7 | 50×50cm stor, 50cm djup | Inga fynd |
| PG 5 | 2,0 | 40×40cm stor, 60cm djup | Inga fynd |
| PG 6 | 1,5 | 50×50cm stor, 60cm djup | Inga fynd |
| PG 7 | 1,0 | 40×40cm stor, 80cm djup | Inga fynd |
| PG 8 | 2,5 | 40×40cm stor, 80cm djup | Inga fynd |
| PG 9 | 1,3 | 40×40cm stor, 60cm djup | Inga fynd |
| PG 10 | 2,3 | 50×50cm stor, 70cm djup | Inga fynd |
| PG 11 | 0,5 | 70×70cm stor, 1,2m djup | Tränagel, tegelfragment |
| PG 12 | 0,7 | 70×70cm stor, 1,2m djup | Tegelfragment |
| PG 13 | 1,0 | 70×70cm stor, 1,2m djup | Tegelfragment |
| PG 14 | 1,0 | 70×70cm stor, 1,5m djup | Tegelfragment |

Bilaga 2. *Resultat av $^{14}C$ datering av trä från Kungälvs kommun, Västra Götalands län. Ångströmlaboratoriet, Uppsala universitet. Labnummer Ua-41189. Göran Possnert coh Ingela Sundström*

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Uppsala 2011-02-18

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**Resultat av $^{14}C$ datering trä från Kungälvs kommun, Götalands län.**

Förbehandling av trä:
1. 1 % HCl tillsätts (8-10 timmar, under kokpunkten) (karbonat bort).
2. 1 % NaOH tillsätts (8-10 timmar, under kokpunkten). Löslig fraktion fälls genom tillsättning av konc. HCl. Fällningen som till största delen består av humusmaterial, tvättas, torkas och benämns fraktion SOL. Olöslig del, som benämns INS, består främst av det ursprungliga organiska materialet. Denna fraktion ger därför den mest relevanta åldern. Fraktionen SOL däremot ger information om eventuella föroreningars inverkan.

Före acceleratorbestämningen av $^{14}C$-innehållet förbränns det intorkade materialet, surgjort till pH 4, till $CO_2$-gas, som i sin tur konverteras till fast grafit genom en Fe-katalytiskreaktion. I den aktuella undersökningen har fraktionen INS daterats.

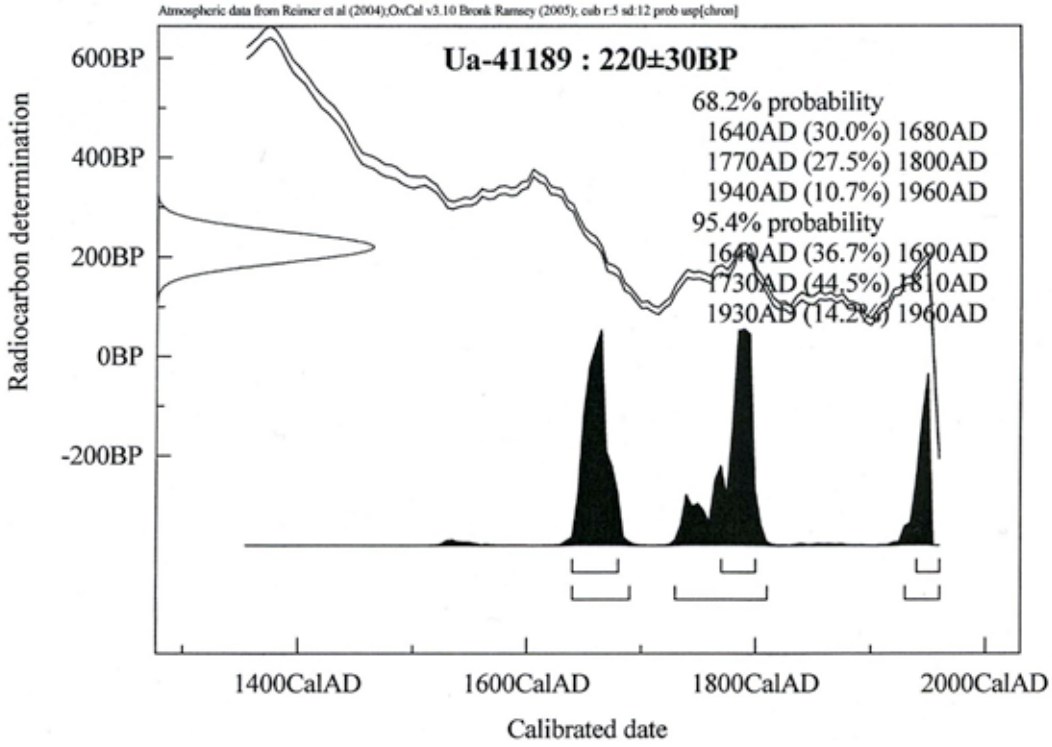
RESULTAT

| Labnummer | Prov | $\delta^{13}C$ ‰ VPDB | $^{14}C$ ålder BP |
|---|---|---|---|
| Ua-41189 | Kungälv Fu, provgrop 2 | -29,9 | 220 ± 30 |

Med vänlig hälsning

Göran Possnert

Göran Possnert/Ingela Sundström


Atmospheric data from Reimer et al (2004);OxCal v3.10 Bronk Ramsey (2005); cub r:5 sd:12 prob usp[chron]
Ua-41189 : 220±30BP
68.2% probability
1640AD (30.0%) 1680AD
1770AD (27.5%) 1800AD
1940AD (10.7%) 1960AD
95.4% probability
1640AD (36.7%) 1690AD
1730AD (44.5%) 1810AD
1930AD (14.2%) 1960AD
Radiocarbon determination
600BP
400BP
200BP
0BP
-200BP
1400CalAD
1600CalAD
1800CalAD
2000CalAD
Calibrated date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VÄSTARVET