

Uncovering the Past

An Archaeological Study of Oyster Beds at Emsworth

Project Summary

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About the Project

The Emsworth oyster beds were part of a system of natural and artificial beds and pits used to seed, sort and grow oysters. The industry included fleet of dredging vessels to collect oysters from natural and artificial beds as well as from sources abroad. The timber remains of the oyster beds are visible on the foreshore at low tide. Archaeological investigation of these remains was undertaken in 2008. Work included foreshore survey involving local volunteers and historical research to help understand the development of the site.

The area surveyed in on the north part of the Emsworth foreshore, Figure one shows the oyster beds and features overlain on an Ordnance Survey (OS) map dated to 1974. To the south of these features is an area marked 'Oyster Bed' which is the remains of 'The Ark' which was also surveyed.

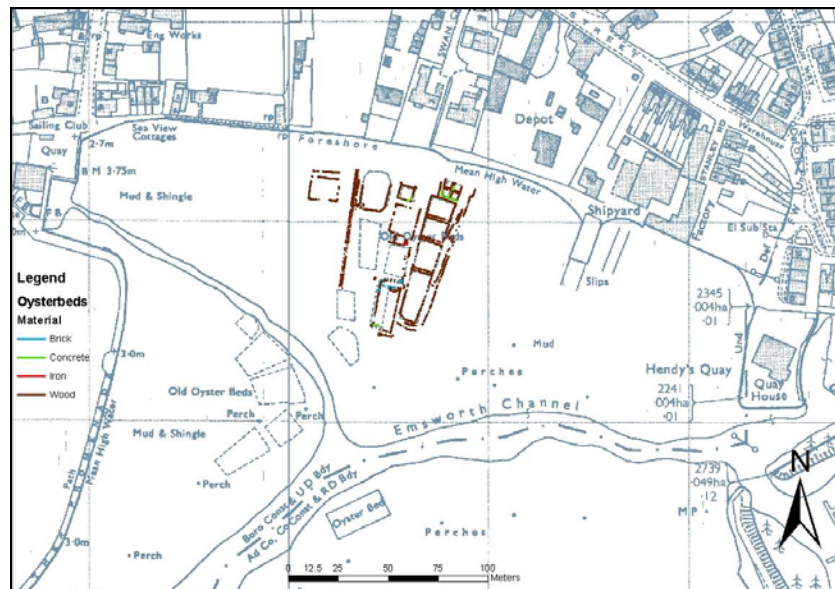


Figure 1: Emsworth Harbour showing surveyed oyster beds (Based on 1974 OS map)

The History of the Oyster Industry

Maps, photographs and documents provide a range of sources of information on the Emsworth oyster industry and the use of the oyster pits and ponds. The site has an interesting development which is related to the oyster trade of the Solent and more widely across England.

Map and Chart Evidence

The OS maps of the Emsworth area show the extent and arrangement of the oyster pits from the early 19th century onwards. As these maps are updated relatively frequently they show a lot of detail on the changes in the oyster beds over time. Figure 2 shows the OS map from 1866 and is one of the earliest records of the oyster beds, however, it is likely the oyster beds had been in existence for some time prior to this.

The map from 1909 shows a reduction in the number of oyster beds, which happened due to an incident of poisoning from Emsworth oysters in 1902. This map, along with details from a map of 1898, was used to create the 'Plan of Oyster Bed and Layings' (Figure 3) which shows the ownership of the beds in detail.

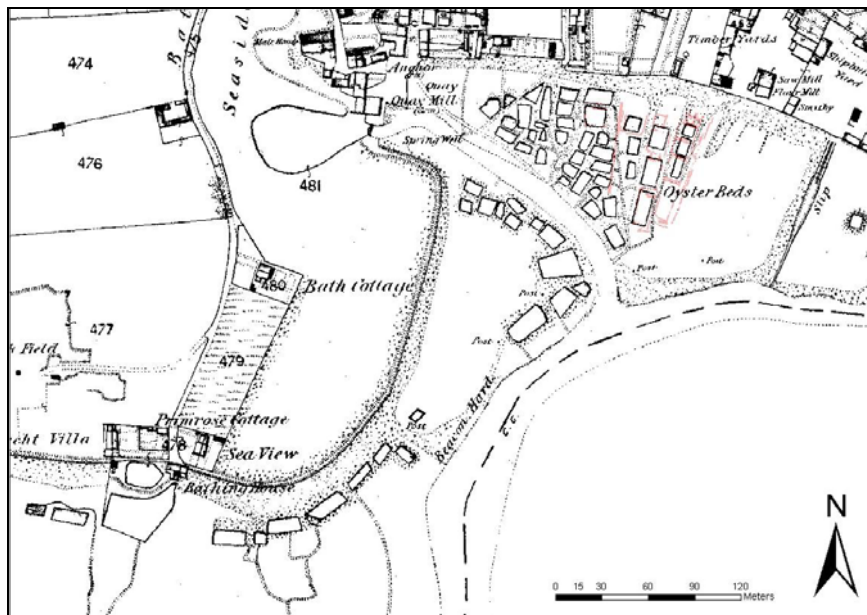


Figure 2: One of the earliest Ordnance Survey maps of 1866 showing extensive Oyster beds to the north of the Emsworth foreshore and along the Mill Pond to the west.

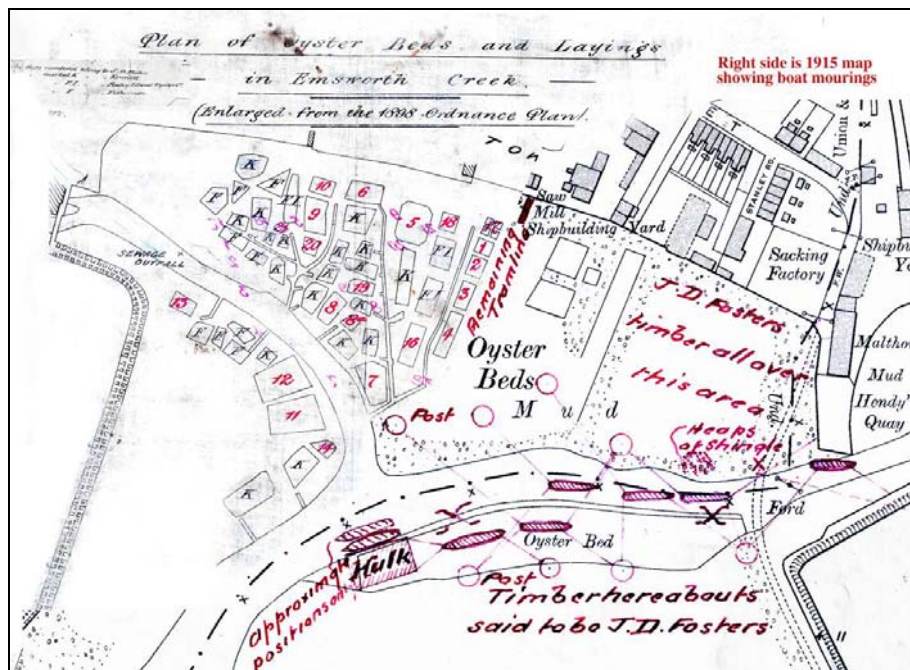


Figure 3: The composite ownership and moorings map based on OS maps from 1898 and 1915.

Historical Photographs

Emsworth Museum holds a collection of historic photographs related to the oyster industry. Many of the photographs show oyster dredging vessels and people involved in the industry. A few photos show the oyster pits, Figure 5 dates from 1898 and shows the water filled pits and some of the associated timber structure.



Figure 4: An historical photograph dating to 1898 of the Emsworth oyster pits. The water filled pits are well defined and the rough timber lining of the pits is evident.

Documented History

The exploitation of oysters has been long established in Britain. There is evidence from the prehistoric period that oysters were favoured by prehistoric hunter-gatherers. However, the first reliable historical reference to large-scale gathering of oysters is from the Roman period when Sallust writing in Rome around 50BC remarked: '*Poor Britons – there is some good in them after all – they produce an oyster*'. Later in 60 AD, Juvenal describes the high repute English oysters held with the Roman elite (Eyton 1858). These references are backed up by oyster shells found in Roman villa sites such as Fishbourne and Barton Court Farm (Potter and Johns 1992). The gathering of oysters at this time is likely to be from natural stocks rather than from artificial ponds.

There are historical records from the Saxon period, the most significant for the Solent area is the Domesday Book which records nine fisheries in the area. Oyster beds are recorded at Bosham, Birdham, Hayling, Cosham and Porchester in the Eastern harbours, Croften near the Meon estuary, Eling and Dibden on Southampton water and Stanswood in the West Solent.

By the middle of the fourteenth century there are written references to protected or leased, and presumably managed, beds at Emsworth, Hayling Island, Wootton Creek, Newtown Harbour, the Medina estuary and the Beaulieu estuary (Tubbs 1999). From the Medieval period the records provide more detail of the locations and types of fisheries. An account of 1307 describes Emsworth oysters as famous for their flavour (Kennet 1985). These sources do not give evidence of how the oysters were gathered, but it is likely that vessels using rakes or dredges were used.

Written evidence relating to oyster vessels is available from the 16th and 17th centuries, but these do not reference storage pits for the oysters. The first reference to oyster pits at Emsworth dates to 1688 (Whitfield 2005, 14). The oyster fishery was flourishing in the 18th century, an account from 1788 records that twelve fishermen

dredged 7.035 bushels of oysters from the harbour (Whitfield, 2003). By the 1830s high numbers of fishing boats had over fished the natural beds, depleting the stocks. To help number a closed season was introduced (between May and August) and a minimum size, but these regulations were widely ignored.

In 1821 the Russell family built a house and oyster beds off Ware Point (known as Oyster Island). These may have been the first oyster beds in the harbour. During the early days of the industry many pits were privately owned by fishermen, but by the late 19th century the Emsworth industry was dominated by two merchants – James Duncan Foster and John Kennett.

There is a large archive of documentation from J.D Foster's business, showing him purchasing oyster pits and an associated merchant businesses. He also developed a fleet of oyster dredging vessels, between 1885 and 1900 he built 11 oyster fishing smacks, which were considered the most innovative fishing boats built in the country at that time. The largest was *Echo* at 80 tons. Around 40% of Foster's oysters were brought to Emsworth for storage in pits, they came from as far away as America, Portugal, Holland and France as well as Falmouth, Whitstable and the other east coast ports. The other 60% of oysters were dredged from more local waters.

Disaster struck the Emsworth oyster trade in November 1902. Oysters served at banquets in Winchester and Southampton caused several guests to fall ill, including the Dean of Winchester (who had been at both events) who died. Tests showed that the oysters had been contaminated with typhoid, which poisoned the guests. The sale of oysters from Emsworth Harbour was banned and the local trade collapsed.

Between the two World Wars the oyster trade began to pick up, but the outbreak of the 2nd World War meant the oyster pits were not able to be tended. Following the war the industry did not really recover and was virtually closed by the 1960s. There was an attempt in the 1980s to revive the industry and in 1985 over 33 tons of oysters were dredged from Emsworth Harbour and sold for £56,000. However, the increase of pleasure craft in the harbour meant that pollutants from anti-fouling paint affected the oysters and the trade finally died.

The Archaeological Remains

The wooden traces of the oyster beds are clearly visible on the foreshore at Emsworth at low tide. To create an archaeological record of the site a program of survey was undertaken.



Figure 5: CDAS and EMHT volunteers recording the oyster pits on the foreshore at Emsworth.

The initial stage of survey involved creating a series of datum points to provide adequate coverage to allow more detailed survey of the oyster pits and the remains of the Ark. With the datum grid in place teams of volunteers braved the winter weather in February to record all the visible remains of the oyster beds. A photographic record was created of the Ark.

Fieldwork Results

The oyster beds and other features visible on the foreshore were given a number (presented in Roman numerals). Figure 6 shows a plan of all the surviving features.

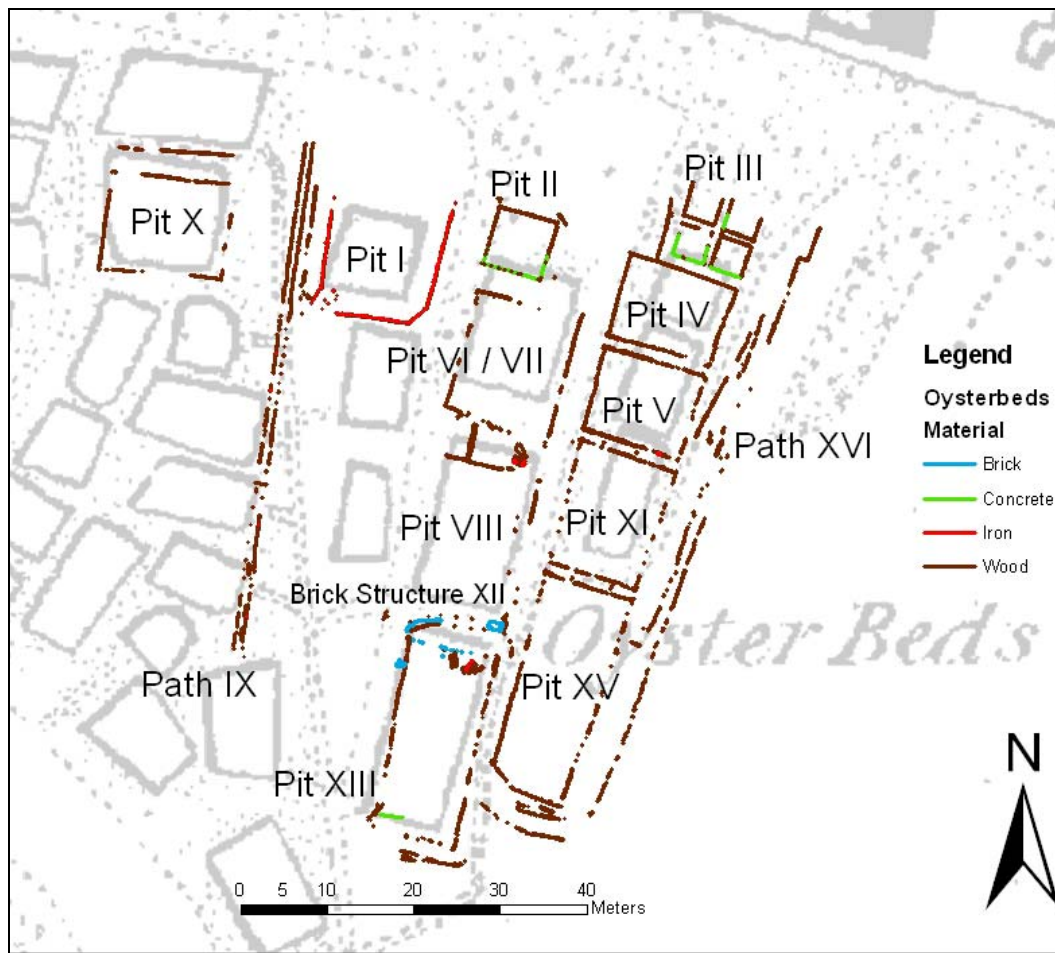


Figure 6: Overall Site Plan showing main exposed features including oyster pits and pathways on the Emsworth foreshore.

Each of the features was recorded by written descriptions, photographs and scale drawings. There is a full description of each of the individual features within the detailed project report (this is available from Chichester Harbour Conservancy), a summary of the results is presented in the table below, with a number of features described in more detail below the table:

Feature	Name	Description
I	Oyster pit	Measures 12m x 15m, no timber structure is visible on northern side. Small channel and timbers in south west corner are likely to be remains of a sluice.
II	Oyster pit	Measures 7m x 7m, made of horizontal planks supported by posts on either side of the planking, fastened with nails. Wood survives on all sides of pit. Pit has a concrete base.

III	Oyster pit	Pond III is divided into four smaller pits with walkways dividing them. Feature measures 8.2 x 8.6m. All four pits have concrete bases with horizontal planking supported by posts making up the edges. Pit III d is the best preserved, there is little surviving timber on the north sides of III a and III b.
IV	Oyster pit	Measures 13m x 10m. North side is in good condition, with other sides poorly preserved but visible. Pit has a circular iron fitting that may have been part of a sluice in SW corner.
V	Oyster pit	Measures 12.1m x 9.9m. Different construction to other pits with outer horizontal planking with an inner layer of vertical planks. Best preserved on its western side. Possible sluice remains near SE corner.
VI & VII	Oyster pit	A single feature rather than two separate ones. Main pit is 15.5m x 12.4m made of horizontal planking supported by posts. Timber 'gutter' feature runs to the south of the pit 4m from SW corner running into pit VII.
VIII	Oyster pit	17.6m x 11.2m in size made of horizontal planking with supporting posts, with a few vertical posts. A patch of what appears to be wickerwork was observed on the western side, this could be the remains of parts of the structure or could be a means of consolidating a pathway.
IX	Path	A raised path made of compacted shingle retained by horizontal planks and regularly spaced posts, which runs north-south down the western edge of the exposed pits. Planks bordering the path are 2m long and have been fastened with iron nails. Path alignment does not match the historic OS mapping or the pit edges, it is believed to post-date the oyster beds and may be related to mooring access from 1960s.
X	Oyster pit	Measures 14.2m by 14.4m, made of horizontal planks supported by posts. There is an additional linear structure on the northern side which may be the remains of another pit.
XI	Oyster pit	See section below table for details
XII	Unidentified brick structure	Collapsed remains of a brick structure, possibly a cistern or tank. Shown on aerial photographs of 1948 to be a long, narrow and rectangular, running the length of west side of pit XII. Possibly related to attempts to revive oyster farming between the wars, or may be related to WWII activities. Not shown on map of 1932.
XIII	Oyster pit	Long pit measuring 9.5m x 22m. Brick structure (XII) lies within this pit. Pit made of horizontal planks supported by posts, west side has a number of overlapping timbers.
XIV	Oyster pit	Only remains visible above foreshore are a single timber.
XV	Oyster pit	Pit measuring 10.5m x 25m, made of horizontal timber planking supported by posts. There appear to have been repairs to this pit in the north west corner and possibly in the south east corner.
XVI	Path	Running for 73m in a north – south direction to the east of pits III, IV, XI and XV.
XVII	The Ark	See section below table for details
XVII I	Disproved feature	Initially recorded as a separate pit feature, but part of the larger pits XIII and XV
XIX	Disproved feature	Found to be part of pit XV
XX	Sea wall	The existing brick and concrete sea wall
XXI	Oyster pit/s	Not surveyed as very little is exposed. There is a pit visible here on 1948 aerial photo measuring approximately 14m x 20m.
XXII	Gully	Gully feature, no structural elements, may be a natural drainage feature or part of oyster bed system.

Comparison of the physical remains with the 1915 'Plan of oyster beds and layings' makes it possible to attribute ownership of some of the ponds to specific individuals.

Feature XI – Oyster Pit

Further details of this feature have been included to provide an example of the more detailed information recorded about each oyster pit. Pit XI is quite well exposed and measures 11.5m by 14.3m (Figure 7). It is mostly constructed with horizontal planking supported by posts, although in its north east corner there is some evidence of a possible repair using vertical planking inside the pit. This north east corner of the pit is supported by a ¼ cut rounded timber. Copper nails used for fastening the planking to the posts are visible on the south side of the pit. There is a gap towards the eastern edge of the south side of the pit that appears to correspond with a gap on the north side of Pit XV. A small waterway or ‘gutter’ between the two pits is visible (Figure 8). On the ‘Oyster Bed and Layings’ map based on the 1898/1915 OS maps, this pit is marked as pit number 3 owned by J. D Foster.



Figure 7: Plan of Feature XI, oyster pit



Figure 8: The south side of Pit XI looking north with a shallow but discernable “waterway” running through a gap in the side towards the north side of Pit XV.

Feature XVII – The Ark

The upstanding remains of The Ark were removed in 1978. The surviving remains represent the base of a floating jetty designed to hold oysters dredged up by the oyster fleet. The surviving timber remains (Figure 9) look well preserved, but the overall structure is badly broken and much of it is covered by debris and mud, which obscures the remains.



Figure 9: The partially exposed remains of the Ark.

Interpretation of the Surviving Foreshore Remains

The timber structures recorded represent the bases of the large timber lined pits used for storing oysters ready for the market. Documents show that oysters were collected from the pits at any time of the day and at any state of the tide as they were never covered by more than 4ft (1.2m) of water. Special rakes were used to gather the oysters before they were transferred to barrels for delivery.

It is thought the pits were constructed by excavating shallow pits into the foreshore and using the material removed to form banks and paths around them. The pits were then lined with timber to stop them filling with mud and shingle. Some of the pits may

have been linked via timber lined conduits or gutters, there are likely to have been used to control water levels, or to rake oysters through.

Although the remains of The Ark could not be safely surveyed there are still substantial remains surviving. This was designed by JD Foster to be used as a landing stage for oyster smacks with the bottom half being storage tanks for scallops. Boats would drop their catches on The Ark from where they would be sorted and either taken to pits to mature or to Emsworth for storage (Rudkin 2004, 19).

Archaeological Significance of the Site

The archaeological remains of the oyster beds at Emsworth are significant. They represent relatively well preserved remains of a once thriving, highly developed, large industry that was important to the local economy and wider Solent region.

As the current archaeological work was limited to survey it is unclear how extensive and well preserved the remains are below the foreshore. However, the waterlogged and anaerobic conditions provided by the mud should mean buried remains are well preserved. There is also the potential that buried elements of pits known to have been removed in the 1960s (J. Tweddell, pers. comm.) may survive below the current foreshore. Although a reduction in foreshore levels over the past few decades has not revealed any traces of these structures.

Although the first record of the use of oyster pits dates to the 17th Century, it is unclear when the pits at Emsworth were first constructed. There is documentary evidence for an 'oyster fishery' in or around Emsworth from the Medieval period, however it is unclear whether this would have used oyster pits or would have relied on dredging natural beds. The oyster beds are clearly well established by the time of the 1866 OS map. The documentation relating to the later 19th and 20th century Emsworth oyster industry, particularly JD Fosters business, provide important historical context for the archaeological remains.

In terms of comparable archaeological sites there are a number of others within Chichester Harbour at Birdham, Prinsted and Bosham (Maritime Archaeology 2007, 70). Within the Solent region the Hayling Island oyster fishery is close to Emsworth and has historical links. Further oyster ponds and beds are recorded at Cosham and Porchester in the Eastern harbours, Croften near the Meon Estuary, Eling and Dibden on Southampton Water and Stanswood in the West Solent (Tubbs 1999). This demonstrates how the Emsworth pits have local and regional connections.

More widely there are sites in Essex (Fulford et al 1997, 87-88) and Kent (Wessex Archaeology, 2005) where coastal surveys have recorded a number of sites related to the oyster industry, which is also well documented historically. However, there have been very few detailed archaeological investigations of these remains.

The existence of other large scale oyster farming enterprises is well documented in southern England, and there were large oyster fisheries at Whitstable in Kent, as well as Brightlingsea in Essex that have survived to the present day. Whitstable and Brightlingsea were notable as the chief oyster grounds of British fisheries in the early 20th century just after the Emsworth industry collapsed (Jones 1926, 82). These industries survive in a substantially reduced form and the industry no longer makes use of pits of the kind used at Emsworth.

Conclusions & Recommendations

The lack of any systematic investigation into the archaeology of coastal fishing and oyster fishing have been identified in the past as serious omissions and a weakness in the archaeological record (Fulford et al 1997; 103, 124). The work at Emsworth provides a useful baseline of data to help address this gap in knowledge and further archaeological investigations of the site have the potential to inform regional studies of the Post medieval and possibly even Medieval fisheries of the region.

There is still more archaeological work that could be done to improve understanding and to make sure remains are recorded as erosion exposes them. To find out more about evidence surviving below the foreshore would require an excavation, this may reveal more about the construction of the beds and provide opportunities for taking samples for dating the structures.

There are also other remains of oyster beds, pits and ponds in Chichester Harbour at Bosham, Birdham and Prinsted, survey of these would provide a good comparison with the Emsworth site.

Acknowledgements

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Site survey was undertaken by CDAS and EMHT volunteers with advice from HWTMA staff.

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