A large mid- Saxon timber structure in the intertidal zone
Sea View, Mersea Island, Essex
Coastal and Intertidal Zone Archaeological Network Report

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Abstract

In 2020 the CITiZAN project undertook a survey of an exposed intertidal structure identified by CITiZAN volunteers at Sea View, Mersea Island, Essex. First observed in the early 2000's but not surveyed, the site comprises three main feature groups. The largest contains two roughly parallel rows of timber uprights on a NS orientation, one made exclusively of birch piles averaging 150mm diameter spaced uniformly 500mm apart and running for 225m north to south until disappearing under a submerged mudbank. An archaeological intervention to extract a single pile for carbon dating revealed it extended at least 90cm below the modern foreshore surface. It was worked into a point 600mm long. A provisional radiocarbon date of mid 7th to mid 8th century AD was returned on two samples. This makes the structure contemporary with several large fishtraps in the Blackwater estuary.

The feature slopes seaward from -1.07m to -2.39m OD. Based on the spacing between uprights and construction style the two parallel rows appear to be contemporary. A single section of wattle hurdle c. 1m x 0.5m was recorded set into the ground on the eastern edge of the birch alignment at -1.45m OD and can potentially provide a relative sea level indicator if dateable. Possible evidence of a trench into which the birch piles appear to be set was found at the northern tip of the alignment. Two alignments of single posts were also recorded to the south running perpendicular to the main structure. A high-resolution aerial survey recorded the alignments of these features in plan and was combined with a high precision RTK ground truthing survey that identified an intricate arrangement of smaller, possibly bracing timbers at the southern end of the feature with evidence of repair and maintenance noted in several places. The feature has the structural hallmarks of a leader for a typical large, mid-Saxon fish trap, similar in size and shape to others found on the Blackwater estuary. Its orientation (north to south) is unique amongst the other Blackwater traps however, and an alternative function cannot be ruled out. The considerable overall size of this structure, its alignment in the context of the present-day coastline, wattle hurdle, and evidence for multiple phases of construction and repair make this an ideal candidate for scientific dating to help establish function and, crucially, the location of a former coastline. This survey was made possible only by the dedicated and watchful eyes of the CITiZAN volunteer team on Mersea Island who first identified this feature in 2019, and specifically by volunteer James Pullen who produced the aerial survey used in this report. This survey built an initial walkover conducted in the early winter of 2019 and was conducted over two low tides on the 22nd July 2020 by CITiZAN Archaeologists Oliver Hutchinson and Danielle Newman. Samples were collected in August of 2021 with the kind assistance of Peter Marshall and Historic England.

The survey and report of Point Clear would not have been possible without the generosity, dedication, knowledge, and enthusiasm of the Mersea Island CITiZAN volunteer team. A heartfelt thanks to Mark and Jane Dixon, James Pullen, Carol Wyatt, Alan Williams and Geoff Lunn for making every trip to the foreshore a joy.

Introduction

Mersea Island, Essex is located at the mouth of the Blackwater and Colne estuaries *(Fig. 1)* 12 miles south of Colchester. The Sea View site is located at TM 02631 12256 and accessed via a public beach, a five-minute walk from the nearby public car park. Access is possible year-round, but a low tide of at least 0.4mOD (preferably without an onshore wind) is required to observe all features described in this report. A large shingle spit to the NW of the site is the recommended access route across the foreshore in both directions.

The foreshore to the south of Mersea Island has been subject to significant coastal erosion since the early 20th century, with parts of the foreshore losing up to 1.5m depth of saltmarsh and sediment by the late 1950's (Frost 1979). Such dramatic loss is the main reason why so many archaeological features, sites and enigmas are visible on the great expanse of mudflats (*c.8km^2)* revealed at low tide and stretching from Mersea Stone in the east all the way to the Monkey beach at the SW tip of Mersea Island. Sea View is located to the western end of this mudflat in a location prone to erosion. The features described here were evident in the late 1980's (Fig XX) although systematic survey was not undertaken. Since then, more of the timbers to both the north and south have been exposed due to coastal erosion. Many of the uprights retain their bark just below the surface, often in exquisite condition. suggest that a recent, more rapid period of erosion has taken place.

The deposits on the wider foreshore are characterised by a shingle beach marking the present mean highwater line (MHW) giving way to soft muds, silts and narrow bands of shingle stretching 350m to the mean low water (MLW) line. Areas of naturally formed oyster beds are numerous and in places dense, obscuring the foreshore. A shingle spit extends directly south of the access route to Sea View beach providing more sheltered waters immediately to the east and west where softer, deeper mud has pooled.

Deposits around the northern section of the feature consist of a thin layer of soft muds covering hard, presumably base clays into which the feature was originally seated. A large, dense natural oyster bed has developed in the centre of the alignments. South of this a bed a firm, blue grey base clay is exposed, overlain in places by softer muds. The southernmost end of the exposed timbers sits on a shelf of clean, hard blue grey clay substrate. Where soft muds are present, they seal the exposed archaeology, where they are not present natural clay exposed and open to erosion.

The site survey was produced using Leica Zeno Mobile and a GG04 antenna RTK survey kit. The aerial survey was conducted using a DJI Mavic II and the orthomosaic produced using Agisoft Photoscan.

Background

CITiZAN were alerted to the Sea View site by volunteer James Pullen in the late summer of 2019. He described groups of linear timbers features perpendicular to the present shoreline with a complex arrangement of smaller stakes and uprights towards the low water line. He went on to produce an aerial survey *(fig.2)* of the area and proposed CITiZAN visit the site for an initial walkover survey to confirm that the site was not modern and of archaeological interest. This was undertaken by CITiZAN Archaeologist Oliver Hutchinson in October 2019 and a sample of uprights were surveyed to record presence/absence of bark, tool marks, dimensions etc. Non-invasive cleaning back of oyster shells and loose muds was conducted to examine the makeup of the foreshore. Samples of an exposed wattle panel or collapsed wattle fence were taken on the basis that the remains appeared fragile and at risk of imminent loss. The panel may provide a Relative Sea Level Indicator point when dated and if confirmed to be in situ.

Description of the features

The principle remains observed fall into three categories as identified on the site plan *(fig. 3)* and are grouped thus; 1) two linear timber features, 2) two sections of exposed wattle or brushwood 3) two short alignments of posts running perpendicular to groups 1 and 2.

1. **Linear features**

Two adjacent timber post alignments.

Feature 1: A row of timber piles *(fig. 4)* running 138m north-south, perpendicular to the present shoreline. The alignment tapers westwards at the southern end towards an adjacent alignment (Feature 2). A natural oyster bed obscures a 5m section roughly in the centre of the row, but it is assumed that Feature 1 is a continuous row given the similarity in timber, spacing and alignment both to the north and south of the oyster bed. A clear terminal was observed at the northern end of the feature, but the observable remains run into the sea to the south making the original extent impossible to identify with certainty. Aerial survey indicates that the row continues beneath the surface of the water for at least a further c.10m on a downward slope into the sea before becoming unobservable beneath the water.

Feature 1 comprised 100 vertical upright timber piles in the round. The piles average 160mm in diameter when measured at the base where the presence of bark indicates their original size as trunks. Over half the timbers have bark present at the base which appears to be a function of recent erosion, and, based on the quality of preservation, indicates that the trunks are likely of birch *(Betula)*. The average diameter suggests the feature is made up of the trunks of relatively young trees, *c.*20 years old. They stand between 20mm - 600mm proud of the foreshore with the more exposed (and therefore taller) piles found towards the northern section of the alignment. The above ground tips of the piles are heavily eroded, often to a point made up of just heartwood. Below the tip the wood is friable and honeycombed, a likely result of erosion. The piles are regularly spaced averaging 500mm apart and set vertically with a considerable degree of precision. The northernmost exposed pile is squared at the base, measures 100mm diameter across its rounded upper portion and displays extensive tool marks and facets suggesting a worked, pointed end below the surface. To the southern end of the alignment several slightly outlaying piles were recorded, possible repairs or bracing elements. Two small archaeological interventions suggest that the piles were set in a trench *backfilled with* soft, blue grey, sterile clay although further intervention is required to confirm this proposal. Not all the timber piles in this feature were fully surveyed due to time constraints.

Feature 2: A second row of smaller piles (*fig 5.)* and stakes extending 124m nw-se. All but one are in the round and they average 100mm diameter. No bark was present on any timbers in this row. All appear to have been set vertically but with less precision than those in Feature 1. Several posts have adjacent smaller stakes (observed but not surveyed due to time constraints) driven in immediately adjacent, presumably wedges or repair work to provide stability. To the immediate south of the oyster bed in the middle of the feature a series of smaller adjacent rows of stakes and posts have been exposed to the east of the main alignment. These range in diameter from 100 – 50mm and are set with their upper tips leaning away (eastwards) from the vertical piles. This form is also evident at the southern end where three further parallel rows of over 40 posts and stakes of various sizes are exposed running for 7m along the eastern (outer) side of the alignment (Fig. X). Set at a variety of

angles with upper tips pointing away from the main alignment they appear to form a bracing element to the feature. The exposed remains were not fully surveyed due to time constraints.

2. **Exposed wattle and brushwood**

Feature 3: An exposed section of wattle panel *(fig 6.)* abutting the outer (eastern) face of Feature 1 was identified, cleaned and photographed. It is of rod and sail construction and measures 600 x 700mm. The presumably hazel wattles are firmly embedded in the exposed surface which lies at -1.45m OD. The ends of two wattles show evidence of tool marks. It was not possible to ascertain with certainty if the panel was intentionally laid directly on to the surface beneath or if it came to rest as a result of collapsing from a position affixed to Feature 1. Further monitoring of the feature may provide evidence to establish an answer. Given the risk of loss to erosion this feature was sampled for species ID and C14 dating including two samples on which tool marks are present.

Feature 4: The exposed edges of a likely brushwood raft identified on the outer (western) edge of Feature 2. The area measures *c.*2 x 3m and is covered by loose water born sediments. The wattles are set in firmer grey blue clay, presumably the same surface as Feature 3. Whilst not a woven panel, the existence of this raft may suggest that working surfaces were laid on the outer edge of each alignment.

3. **Two single rows of stakes**

Feature 5: Two rows of single stakes were rapidly surveyed running on a roughly e-w orientation, perpendicular to Features 1 and 2. They comprised stakes in the round with average diameters of 60mm. They were set into firm grey base clay and showed signs of heavy erosion. It appears that these rows are not related to the larger structural elements with no evidence for any intersection

Radiocarbon dating

Two uprights were sampled for radiocarbon dating, one from feature 1 and 2. They were provisionally dated to the mid 7th to mid 8th century AD. A full dating report is currently being prepared.

Interpretation of features

On the basis of survey and select interventions, the remains appear to be the uprights of a large, possibly wattle panelled fence. Dating suggests that features 1 and 2 are roughly contemporaneous. Numerous repairs to both linear features are evident. Outlaying piles and adjacent smaller rows of stakes to the seaward end appear to provide bracing elements to the larger superstructure. Limited archaeological interventions suggest that a trench may have been cut to seat the piles before being driven in by their worked points. The trench was possibly backfilled with grey clay (which occurs close by to the site) and may indicate a desire to set the feature in an anaerobic matrix to maintain its structural elements and rigidity in the face of tidal forces.

Discussion

The function of the two linear features is difficult to determine based on the information recovered to date. In the absence of environmental sampling to help establish the character of the environment into which the feature was originally set (terrestrial or intertidal) two functions are proposed with caution.

Firstly, taken together, the grand scale and form of this structure is reminiscent of a leading arm similar to several mid-Saxon fish traps surveyed throughout the Blackwater Estuary, two of which are found to the east and west of Mersea Island (Heppel *et al. 2005)*. The accuracy of both alignments and the accuracy of placements suggests the two rows of posts appear to be of considerably differing dates, Feature 2 the earlier, less precise with the structurally more significant and precise Feature 1 a later repair or reuse following the original alignment. The presence of wattle panelling and brushwood (laid or fallen) supports this theory. With no evidence of wattles woven directly into the superstructure, the wattle work observed may represent the remains of a prefabricated panel brought to site and affixed to the birch uprights, a method typical of larger fish traps of the period. It may also represent the re-use of a broken panel laid by the trap in softer muds to ease access to the 'cod end' (apex) of the trap to the south. The presence of numerous additional rows of smaller posts and stakes towards the southern end of Feature 1 appears to suggest that the structure, or elements thereof, were braced, however the purpose of this is unclear. Feature 5 may indicate the presence of a second leading arm with a timber alignment running SW-NE. It is closely comparable in composition to Feature 2 and should be considered as part of any future scientific dating programme for the site.

Another interpretation considers that the exposed remains represent both leading arms of an extremely narrow fish trap, perhaps with an intersection of features 1 and 2 hidden beneath the oyster bed. However, given present understanding of how such traps operate, the orientation of the southern V i.e., the mouth of the trap facing the oncoming tide, would render the trap ineffective. Either interpretation indicates that the structure has likely been maintained during its working life, but how long that lifespan was can only be determined by a comprehensive scientific dating programme.

The apparent use of birch piles is of note. A rapid survey of an exposed timber alignment by CITiZAN in 2018 identified birch piles some 1.8km offshore SE from Rewsalls Farm, Mersea Island, towards the very extent of the low water line. The feature is an apparent extension to an un-dated fishtrap surveyed by Heppell (2005). The use of birch piles in a fishtrap therefore has parallels on the island and indicates that birch was used in intertidal environments.

The second proposed function is a raised crossing for livestock to traverse boggy or semi-permanently flooded land allowing access between the main island and grazing marsh. Historical evidence suggests that sheep were farmed in their hundreds on the saltmarsh to the south of Mersea in the 17th century before storm surges inundated the marshes presumably leaving them inaccessible. Evidence of bridging marshland on the Mersea flats dates to at least the Bronze Age with evidence of a trackway (dated to 952BC) linking islands in the marsh. More substantial causeways may have followed to move more substantial loads across the marshes and Features 1

and 2 may indicate a maintained access route, in this case one heading towards Bradwell point on the south side of the Blackwater channel.

Figures

Figure 1: Location of Mersea Island and Sea View site

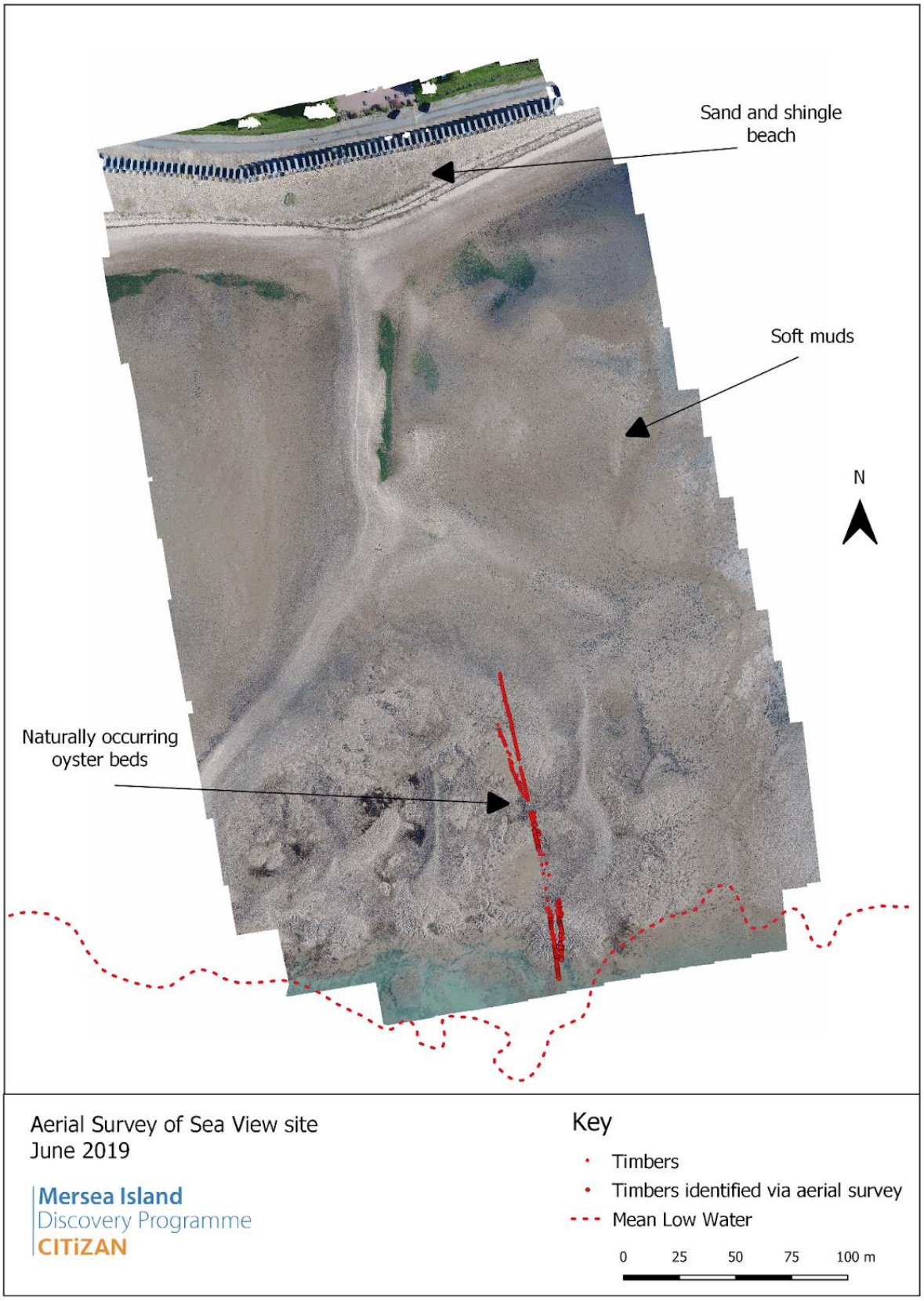

Figure 2: Aerial survey of Sea View Site, June 2019

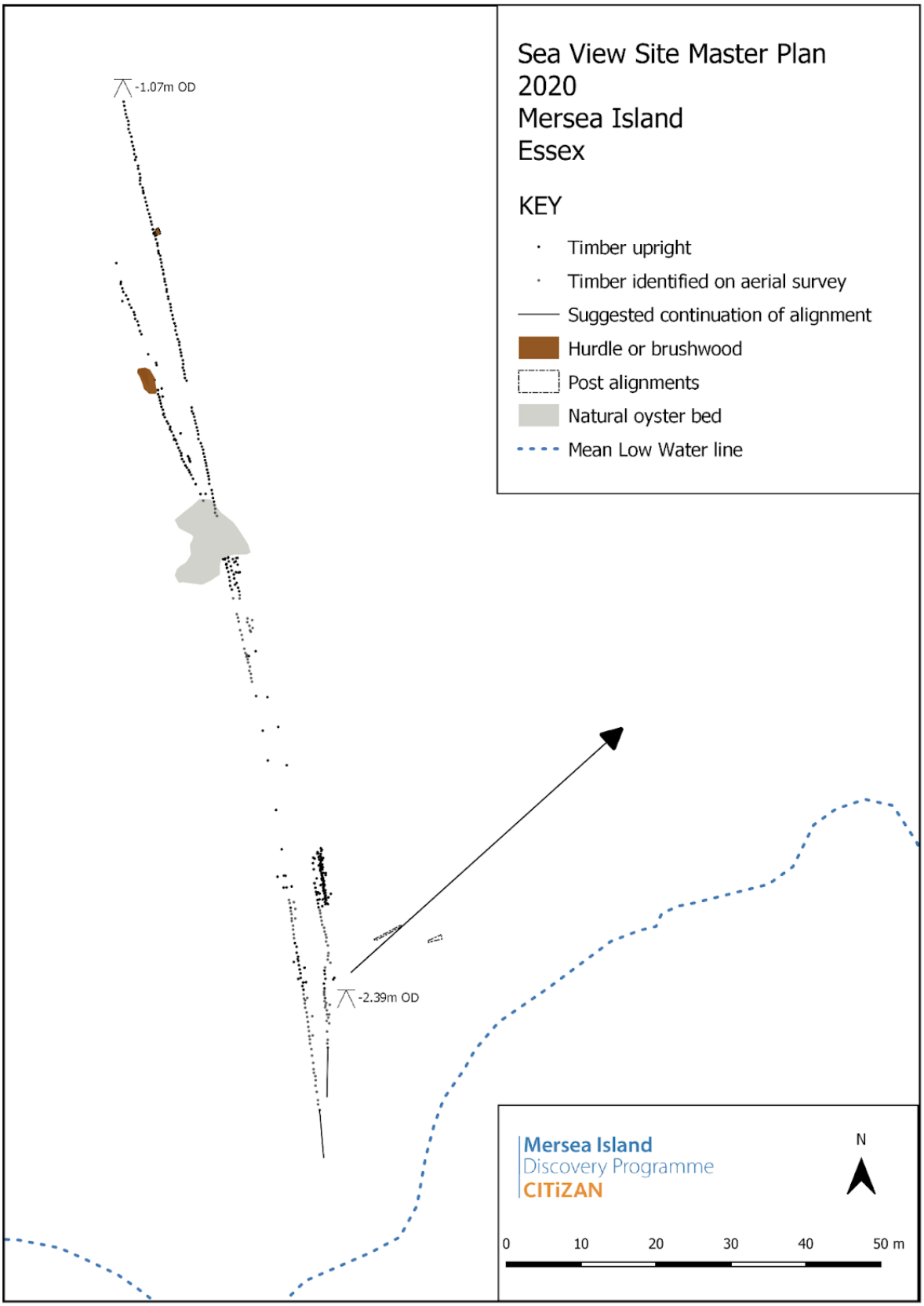

Figure 3: Plan of Sea View site 2020

Figure 4: Feature 1 looking south with Feature 3 (hurdle panel) in the foreground. The natural oyster bed that obscures the centre of the alignment can be seen towards the upper portion of the image.

Figure 5: Feature 2 highlighted in red. Image looking south

Figure 6: Feature 3 - a section of wattle hurdle work

References

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