World War II Uncovered
Sample survey of WWII heritage at risk along the Suffolk Coast

Archaeological Survey Report

SCCAS Report No. 2014/135
Client: Touching Tide Landscape Partnership Board/Suffolk County Council
Author: Mark Sommers
September 2015

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SCCAS Report No. 2014/135
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Report Date: February 2015

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Summary

Coastal erosion is active in the county of Suffolk and sites and objects of WWII interest are regularly being exposed. Many are already known and even recorded, but others are previously unknown assets which, following exposure, are at risk of loss or damage without adequate record. In an attempt to quantify the number of potential sites currently being exposed three sample areas of the coast were rapidly surveyed at Bawdsey, Sizewell and Walberswick. The results of the survey and the accrued base-line data was also used to identify sites/assets liable to be under threat from coastal erosion over the coming decades and to test the accuracy of existing records. The work was commissioned by Touching the Tide with funding from the Heritage Lottery Fund and The Crown Estate.

A number of well-known and previously recorded sites and findspots were identified. These comprised pillboxes and lines of anti-tank cubes, some of which has clearly suffered from the effects of coastal erosion since their initial recording. Another common coastal defence, parts of which were noted in all three survey areas, was the remains of beach scaffolding. It originally consisted of great banks of upright and horizontal scaffold tubes that were anchored in place along the beaches to prevent access to landing craft and tanks and can be seen in 1940s aerial photographs along a large proportion of the Suffolk coast. Remnants of this defence noted on the beaches consist of occasional lengths of discarded scaffolding pole and odd scaffolding clips and brackets. The in-situ bases of a group of scaffold pole uprights, sawn off at ground level, were seen on the beach north of Sizewell, and a large group of scaffolding clips, presumably discarded when the scaffolding was being removed, were also noted. On Bawdsey Beach a near continuous line of steel uprights set into square concrete bases were noted. Although their interpretation is not conclusive, they are possibly anchoring structures for beach scaffolding or barbed wire obstructions. Some are located just above the high watermark although many are below and are consequently hidden at high tide and as such are a potential hazard to bathers.

Coastal managers may wish to compare the coastline in their area of responsibility with the relevant Guide to Second World War Archaeology in Suffolk volume. This four volume set compiled by Robert Liddiard and David Sims, published in 2014 and funded by the 2 Seas INTERREG project, contains a detailed inventory of WWII defences which can be cross referenced with current or predicted coast change to indicate which
assets are likely to be at risk (and which may therefore present potential hazards to beach users) in any given coastal change scenario. This Touching the Tide-commissioned study has confirmed that these inventories are complete and accurate.

Many of the more substantial defences are *in-situ* and that some evidence for others can usually still be found. However given the likely coastal erosion over the next 100 years, it can be seen that the WWII sites and assets identified during the surveys within the Bawdsey and Walberswick areas will be lost whilst very few, if any, within the Sizewell survey area will be affected.

A fourth survey area, immediately north of Southwold, was proposed but map regression revealed that substantial erosion had occurred along this stretch of coast to the extent that the coastline in the 1930s was between 200m and 300m out from the present low water mark. Consequently, any potential WWII assets that may have existed are likely to have already been lost.

Unfortunately it is impossible to make firmer predictions of the likely timescale of future losses. Over the last decade or so, in some places new defences have stabilised a previously eroding shore, whilst in others erosion has already greatly exceeded that previously envisioned; Suffolk has a very dynamic shoreline.
1. Introduction

There are a significant number of recorded heritage assets dating from World War II (WWII) recorded along the Suffolk Coast along with an unknown number of others that have yet to be identified. Many are known only from historic records or early photographs and their present condition and the general rates of survival are unknown and unquantified. Coastal erosion is very active along parts of the Suffolk coast and sites and objects of WWII interest are being freshly exposed all the time. Some of these are known and have been previously surveyed and recorded in recent times but others are “new” and previously unknown assets or are potential assets known from documentary evidence only. A large proportion of these are at risk of loss or damage without adequate record following exposure. Additionally, such remains can also create challenges for the management of public and recreational beaches in the area.

Touching the Tide (TtT) is a Heritage Lottery Fund Landscape Partnership Scheme along the Suffolk Coast, hosted by the Suffolk Coast & Heaths Area of Outstanding Natural Beauty (AONB). The three year project, started in May 2013 and aims to celebrate and conserve the heritage of the Suffolk Coast and to increase understanding of coastal change. Working with The Crown Estate, TtT commissioned the Contracting Team of the Suffolk County Council Archaeological Service (now known as Suffolk Archaeology CIC) to undertake a sample survey of some of the WWII heritage at risk from the sea.

The survey had three aims;

- To determine the completeness and accuracy of the historical records
- To assess and record the current (2014) state of the heritage
- In conjunction with Guide to Second World War Archaeology in Suffolk 2014 (a four volume set) complied by Robert Liddiard and David Sims, to provide an indication as to how much of the heritage might be claimed by the sea over the medium term, and so assist in managing that process and any associated safety risk to beach users.

Three sample areas were chosen for the survey (Fig. 1), these were at Bawdsey (Area A; from the northern edge of Bawdsey Estate to East Lane), Sizewell (Area B; Sizewell power station to Dunwich Heath) and Walberswick (Area C; a 2.5km stretch south of the
Figure 1. Plan of the Suffolk Coast showing the areas of investigation
river mouth). A fourth area, the stretch of coast immediately to the north of Southwold (Area D), was also proposed although map regression suggested that all WWII coastal sites would have been already been lost through erosion.

A two stage approach was proposed for the survey, the first being a gathering of baseline data through a combination of limited documentary research to prepare base mapping and site walkover surveys to confirm the actual presence and condition of any WWII assets. The second stage of the project is to undertake targeted investigation of any new, significant or particularly vulnerable remains identified within the sample survey areas.

2. Methodology

The first stage of the survey, the preparation of base mapping, was carried out through interrogation of the existing County Historic Environment Record (HER) and the study of available LIDAR data and aerial photography.

The County HER is bolstered by the results of the Suffolk Coast National Mapping Programme (NMP), one of the pilot stages of English Heritage’s larger NMP. It consisted of plotting all potential archaeological monuments as recorded in aerial photographs. One of the prime sources used was the vast collection of photographs taken by the RAF during and just after WWII. Consequently a large proportion of the recorded features are related to coastal defence along with earlier fortifications and sea defences. For the purposes of this project, only the HER entries related to WWII were included on the base maps.

The site walkover surveys were undertaken by two surveyors. In the case of Area A and Area C the length of the survey route was walked along the beach with the surveyors returning by walking along the adjacent higher ground. For Area B the surveyors walked apart, one along the beach and the other along the higher ground only.

Recording of any potential heritage assets was carried out with a digital camera using an appropriate scale where practicable. Locational details were recorded using the camera’s built-in GPS facility and/or through the drawing of a basic sketch plan. Any other pertinent details were noted.
The surveys were undertaken during the summer months of July and August 2014. On all days the surveys were undertaken the weather was bright and generally sunny. Each survey was timed to coincide with low-tide to maximise the intertidal area exposed. The tides at the time of each survey should be considered as within the 'normal' range.

Following the coastal surveys their results and the base-line data was studied in conjunction with the coastal change projections, as presented in the Suffolk 1998 Shoreline Management Plan (SMP). This document was reviewed in 2010 and subsequently amended, but the maps showing projected future coastlines were not updated, so these are now almost 20 years old.

Despite the extensive modelling that lies behind the SMP, a large number of uncertainties remain when looking forward over both the short and the long term. For example, the extent and timing of erosion is more of an uncertainty than understanding where erosion and change will occur. One obvious source of uncertainty over very long timescales is the potential development of future coast defences, but important natural factors include the rate of sea level rise, and the frequency of major storm events, both of which strongly influence erosion rates.

The SMP was in any case written for other purposes, and its shoreline projections were (and are) heavily caveated as they depend upon the management decisions taken. In the end the comparison proved unhelpful. It is therefore important to stress that coastal managers will need to use their local knowledge when comparing the historical records with current or projected coastlines.
3. Survey Results

Area A

The survey area comprised a 1.35km long stretch of coast running south from the end of East lane, Bawdsey (TM 3580 4001 to TM 3501 3893). The coastline at Bawdsey comprises a high sand cliff overlooking a predominately shingle beach which slopes down to dense silt deposits at the low water line. The area south and west of the Martello Tower is an area of active erosion which has increased significantly since the construction of rock armoured sea defences in the vicinity of the Tower and two houses close to East Lane. The high land adjacent the beach consists of arable fields with occasional small areas of woodland.

A total of eighteen entries relating to WWII sites are recorded on the County HER. Descriptions of these can be found in Table 1; the locations are presented in Figure 2.
Figure 2. WWII related HER entries within vicinity of survey Area A
<table>
<thead>
<tr>
<th>HER ref.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAW010</td>
<td>Martello Tower W, built AD 1810-1812 and surrounding military area. Just off the beach, built in saucer-shaped hollow, probably artificial. Probably used as a look-out and machine gun emplacement during WWII. A Scheduled Monument.</td>
</tr>
<tr>
<td>BAW050</td>
<td>Bawdsey, East Lane Battery - coastal battery, an emergency battery built during the Second World War as part of Eastern Command's coastal defences. The battery was commissioned in July 1940 and mounted two 6-inch ex-naval guns. By November 1943 the battery was manned by the Home Guard, until 1944 when the guns were reduced to care and maintenance and it was handed over to 332 Coast Battery Royal Artillery. The battery comprised two gun emplacements connected by a walkway with attached magazines and machine houses, a battery observation post and two coast artillery searchlights. Defences included a series of pillboxes and anti-tank cubes. Bawdsey Battery survives in excellent and near complete condition.</td>
</tr>
<tr>
<td>BAW075</td>
<td>Approximately 300m long line of anti-tank cubes running N parallel with Bawdsey Beach from East Lane Battery. From its most northerly point, a 200m line returns NW to a pillbox (BAW 175). 187 cubes in total.</td>
</tr>
<tr>
<td>BAW081</td>
<td>A military strongpoint of World War II date seen in 1945 on aerial photographs at TM35243954. It consists of a number of lengths of barbed wire obstruction forming an enclosure around a central earthwork feature, a number of short trenches arranged in a geometric pattern. It was constructed sometime after July 1940 and by 1948 the only evidence of its existence is some variation in the vegetation cover. Defence of Britain project archive records it as an Infantry strongpoint, consisting of a complex of slit trenches, contained within a hollow square plan minefield. (cont.)</td>
</tr>
<tr>
<td>BAW082</td>
<td>Circular pillbox from WW1 with an octagonal concrete roof 25-30cm thick (a WWII addition?). A short stretch of beach scaffolding can be seen below, at the base of cliff, protecting the pillbox from attack from the beach.</td>
</tr>
<tr>
<td>BAW083</td>
<td>Three possible bomb craters can be seen on photographs taken in 1940; no longer visible in 1945 aerial photographs.</td>
</tr>
<tr>
<td>BAW085</td>
<td>A heavy anti aircraft Diver battery in the Diver Strip at Bawdsey Cliff armed with four 3.7-inch Mark IIC guns equipped with Predictor BTL, and Radar AA No.3 Mark V (when deployed on 24th November 1944), Manned by 430 Battery of 140 Anti Aircraft Artillery Regiment. It formed part of 102 Heavy Anti Aircraft Brigade deployment. Site comprised four emplacements and a substantial number of ancillary buildings, most of which appear to be Nissen huts.</td>
</tr>
<tr>
<td>HER ref.</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
</tr>
<tr>
<td></td>
<td>It appears that the guns may have already been removed by Oct 1945 and by 1948 the site had been dismantled as only traces of the roads and the foundations of the Nissen huts can be seen on photographs of this date.</td>
</tr>
</tbody>
</table>

**BAW086**
A military strongpoint of World War II date can be seen on aerial photographs from 1945. It consists of a single storey hexagonal pillbox (type 22) with door in NW wall protected by an 'L' plan blast wall (which has been damaged by gunfire). Located on the cliff edge with a length of barbed wire obstruction enclosing its western side. There may be other small stretches of barbed wire around the feature but the aerial photographs are unclear. There is also activity evident at this location in 1940, possibly another stretch of barbed wire and a trench in the centre where the pillbox was later to be constructed. The barbed wire has been removed by 1948, but the pillbox is depicted on the modern base map.

**BAW087**
A World War II strongpoint is visible at this location on aerial photographs taken in the 1940s. A number of trenches are visible in 1940 along with a stretch of barbed wire obstruction. By 1945 a strongpoint is evident, three side of the enclosure being barbed wire whilst the eastern side is part of the stretch of beach scaffolding (see BAW100). The barbed wire has been removed by July 1948. Includes a type 22 pillbox (see BAW178).

**BAW098**
A number of World War II military features, constructed at some time before July 1940, are visible on aerial photographs, including a number of slit trenches, two small circular structures and a larger circular structure which appears to have a ditch encircling it. This feature may be a single gun emplacement, possibly a Spigot Mortar emplacement. (cont.) By July 1944 another building has been constructed just to the north of the gun emplacement. It appears to be a roughly rectangular building which is rounded on one end (the type 22 and 23 pillbox combination recorded as BAW176?). It is still depicted on the modern base map. There are also a number of temporary structures visible at this date which may relate to the later construction of the Diver battery immediately to the northwest (BAW 085). By October 1945 this battery has been constructed and the only earlier feature still visible is the rectangular building visible.

Also seen as part of field survey of Suffolk Coast (2002) - hexagonal pillbox with rectangular brick built blockhouse/observation platform (?) to rear (see BAW176). 50m to S of pillbox there is a small breeze block built structure of unknown purpose.

**BAW099**
No.2 Coast Artillery Searchlight. Single-storey, rectangular plan with curved front elevation, flat reinforced concrete roof with ventilation hole set centrally over searchlight position. Whole structure raised up on brick piers, glazed pipe cable ducting entering through floor. Constructed sometime between July 1940 and October 1945 (aerial photo evidence). The searchlight would have functioned as part of the coastal battery to the north (BAW050). By June 1996 the cliff has been eroded and the structure has collapsed on to the beach. A
<table>
<thead>
<tr>
<th>HER ref.</th>
<th>Description</th>
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<tbody>
<tr>
<td></td>
<td>small building standing behind the Martello Tower, inland from the searchlight, has been identified as the building that housed the generator.</td>
</tr>
</tbody>
</table>
| BAW100  | A length of beach scaffolding of World War II date can be seen [on aerial photographs] running along the beach between the coastal battery at East Lane (BAW050) and the strongpoint to the south (BAW087) where it forms one side of the enclosure. Remains of the scaffolding were still visible in 1995.  
2002 - Bawdsey Beach, East Lane, Bawdsey. Scaffolding obstacle, although rusting, remarkably well-preserved within beach. Southern section almost to full height. |
| BAW117  | A system of slit trenches can be seen at the edge of the cliff, north of RAF Bawdsey in 1940. The photographs from this date are of poor quality but there may be structures within this area of trenches. To the south of the area two buildings can be seen, these presumably had a military purpose. By April 1944 barbed wire can be seen running around the site and then north along the cliff edge to TM34963899. There may be a few other structures but these are tiny and therefore have not been mapped. By 1945 the barbed wire has been removed but the buildings and the slit trench are still visible. The buildings have been removed by 1952. |
| BAW149  | Group of large concrete blocks seen at mid tide level; 4 visible although there may be more that weren't visible at time of survey. Possibly anti-tank blocks although much larger than normal (2m square). Very isolated, possibly associated with wooden groynes - sea defence structure? |
| BAW162  | Pillbox of First World War period - single-storey, circular plan, slightly domed concrete roof, carried on corrugated sheeting supported by two steel joists. Small doorway in rear elevation. Formerly closed by double-armoured doors; presently, only the steel hinge-pins remain. Wide splay embrasures. |
| BAW176  | Combined type 22 and type 23 pillbox. Single storey, regular hexagonal plan front section, rectangular plan rear section attached to NW wall. Rear section consists of an open anti-aircraft light machine gun emplacement. |
| BAW178  | Type 22 pillbox. Single-storey regular hexagonal plan. Flat concrete roof; doorway in NW wall. 2 embrasures fitted with Turnbull mountings. Formerly accessed by a 'U' plan trench and enclosed by a square barbed wire enclosure. |
| BAW186  | East Lane, Bawdsey. Four storey, square plan structure with armoured steel roof. Blocked entrance in rear wall to defensible ground floor. Possibly switch room on 1st floor. Searchlight directing station on 2nd floor. Open battery observation post on 3rd floor permitting 360 degree field of view. |

| Table 1: WWII related HER entries in vicinity of survey Area A |
Walkover survey

The walkover survey was carried out on the 23rd July 2014. Assets and any pertinent features noted are marked in Figure 3. Descriptions follow below:

At the northern end of the search an extensive length of rock armour, formed of large boulders, has been placed along the front of the East Lane Battery and south to beyond the site of Martello Tower ‘W’. This work has been done to protect the Martello Tower, which is a private dwelling, and the adjacent houses. It has masked the beach area and hidden any earlier features that may have been present. Occasional fragments of concrete which could potentially have come from demolished WWII related structures were noted in the area immediately to the north of the tower and houses.

**A1**: A pillbox, probably a Type 22, lying inverted on the beach, at or just below the low water mark (Plate 1). The cliff edge is now lies approximately 70m to the northwest. It is presumably the same pillbox recorded on the HER as part of BAW178 but is clearly no longer *in-situ*. 
Figure 3. Area A – assets/features noted during survey
A2: A pillbox, probably a Type 22, lying inverted on the beach just above the low water mark (Plate 2). It is presumably the same pillbox recorded on the HER as part of BAW086 although it is clearly no longer in-situ, having tipped over and slid down the cliff due to coastal erosion. A number of large fragments of concrete are present lying either side of the pillbox, probably parts of a former blast wall, which this pillbox was recorded as originally having, along with a possible ‘plinth’ that may have reinforced the sea facing side of the structure. The cliff edge now lies approximately 50m to the northwest.

A3: Large fragments of concrete, some of which appear to parts of curved walls, and a large single, rectangular slab of concrete (Plate 3). This group is likely to be the remains of WWI pillbox that was reused in WWII after the addition of a thick roof slab. Recorded on the County HER as BAW082. It is not in-situ but has been undermined by coastal erosion and fallen down the cliff and broken apart.

A4: Noted in the eroding face of the cliff were the remains of a structure. It comprised a base of very poorly bonded concrete c.1m thick with brickwork above. A large section of the concrete also lies at the base of the cliff. The main body of this feature was located at a depth of c.1.5m below the ground level (Plate 4). Interpretation was problematic due to the limited exposure but it is presumably the remains of a below ground bunker or a revetted trench that is probably of WWII date. Does not correspond with any HER entries.

A5: A c.550m stretch of steel uprights, each centrally set into a concrete block with a steel rod set in each corner (Plates 5 and 6). The central steel comprises of angled-iron or H- section girder (some are possibly lengths of narrow gauge rail) about 1.8m in length, of which approximately 0.9m protrudes through the top of the block (the block being 0.3m thick and 0.6m square). The line runs at an angle to the existing beach starting off fairly high up the beach at the southern end and moving progressively down the beach before ending just below the low water mark near the pillbox A2. Some of these are still in-situ with the corner rods pushed down into the sand and the central steel standing upright, particularly towards the southern end of the line where it’s higher up the beach, although for the majority of the line they are lying on their sides, but presumably still close to their original location. They are possibly anchors for beach scaffolding, although only limited stretches of beach scaffolding were recorded by the NMP in this area, or they may be uprights related to barbed wire obstructions.
A6: A pillbox, recorded on the County HER as combined Type 22 and a Type 23 (BAW176) was noted (Plate 7). It has suffered somewhat from coastal erosion which has undermined the seaward half of the monument, the Type 22 component, causing it to break away from the rear half and start sliding down towards the beach.

A7: A number of concrete blocks that are cemented together to form walls, along with a length of what is probably a scaffold pole, were noted at the low water mark (Plate 8). The concrete is possibly parts of a ‘small breeze block structure’ that was seen during a field survey in 2002 (see HER entry BAW098). A number of other lengths of probable scaffold pole were noted on beach along a with section of ?concrete pipe (Plate 9), which may be part of a spigot mortar base (one is recorded within the BAW098 site).

Projected asset loss

A large proportion of the known assets within Area A have already been lost or are seriously compromised by present levels of coastal erosion. Within 25 years all the former cliff top and beach defences south of the new rock armour will have been lost. The Martello Tower, the East Lane Battery and associated buildings (BAW 162 and 186, within BAW050, and BAW086) are likely to remain, protected by the sea defences however, at least over a 50+ year timescale.

Area B

The survey area comprised a 3.3km long stretch of coast running south from a point near the Coastguard Cottages on Dunwich Heath to Sizewell Power Station (TM 4785 6762 to TM 4771 6433). The coastline along this stretch runs along the edge of the Minsmere RSPB Nature Reserve, a large area of at low lying land protected by sand and shingle banks. The beach is formed a sandy shingle whilst the banks and the land behind the sea defences is and shingle but covered in vegetation, primarily grasses with occasional; shrubs and areas of small trees.

A total of twenty-three entries relating to WWII sites are recorded on the County HER. Descriptions of these can be found in Table 2; the locations are presented in Figure 4.
Figure 4. WWII related HER entries within vicinity of survey Area B
<table>
<thead>
<tr>
<th>HER ref.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUN075</td>
<td>A stretch of barbed wire obstruction, c.500m in length, can be seen on aerial photographs from 1941, running along the beach to the east of Dunwich Heath.</td>
</tr>
<tr>
<td>DUN078</td>
<td>1941 aerial photographs show a small number of structures close to Coastguard Cottages by Minsmere Cliffs, and another structure at TM47766792. In addition, there is a camouflaged coastal battery to the south-east of the cottages, at TM47746770, with 2 gun emplacements. The battery appears to have been covered in earth, and is seen as an irregular raised area. By 1945, aerial photographs show many more structures, probably Nissen-type huts, around Coastguard Cottages. There are also a number of associated trackways connecting the various components of this site. By 1952, the Nissen-type huts have been removed, leaving just the concrete floors visible and camouflage has been removed from the coastal battery, revealing the underlying structures in detail.</td>
</tr>
<tr>
<td>DUN079</td>
<td>A number of sections of barbed wire entanglement are visible as structures between TM47336783 &amp; TM47766797 on Dunwich Heath on 1941 aerial photographs. A stretch of coastal defence scaffolding, c.480m long, can also be seen in this area, running NE-SW inland from the beach. One section of barbed wire obstruction is encircling a slit trench which appears to have an associated pillbox (at TM47406780). The features are still visible on 1945 aerial photographs.</td>
</tr>
<tr>
<td>DUN083</td>
<td>A stretch of minefield c.350m long can be seen on the beach between TM47796743 &amp; TM47806708, to the east of Minsmere Nature Reserve, on 1945 aerial photographs. The minefield is not visible on aerial photographs from 1943, and may therefore have been an addition to the coastal defences in the later stages of the Second World War.</td>
</tr>
<tr>
<td>DUN086</td>
<td>Beach defence scaffolding can be seen as a structure running along the beach to the east of Minsmere Nature Reserve for c.1.25km on 1941 aerial photographs. There is one main section, with other short sections visible in places. There are also a few stretches of scaffolding running E-W across the beach, abutting the main N-S line of the defences. These features can just about be made out on 1945 aerial photographs, but they are not so clear. July 2011: series of wooden posts visible at low water mark after low tide along this alignment probably from remains of these emplacements.</td>
</tr>
<tr>
<td>LCS088</td>
<td>A line of anti-tank cubes of World War II date stretch for 1.5km along the beach to the east of Minsmere Nature Reserve between TM47786764 &amp; TM47726611. They can be seen as structures on aerial photographs from 1940 &amp; 1941. They are still visible ‘in situ’ on photographs from 1945 and a number of the cubes are even still visible ‘in situ’ on aerial photographs from 2000. In the 1940s photographs, there are 3 bomb craters along the line of cubes, at TM47766640, TM47766647 &amp; TM47766652. It is possible that these were created during an attempt to attack and break the line of cubes, thus reducing their effectiveness.</td>
</tr>
<tr>
<td>HER ref.</td>
<td>Description</td>
</tr>
<tr>
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</tr>
<tr>
<td>LCS089</td>
<td>A number of bomb craters of World War II date are visible on open ground close to the beach, near Minsmere Nature Reserve, on 1945 aerial photographs. These craters may have been caused by practice firing in this area during the war period, or by enemy fire. The fact that many of the craters are in straight lines suggests that they may have been created by an aeroplane dropping bombs, perhaps a bomber releasing surplus bombs at the end of a bombing raid. Much of the area is now underwater, as part of the nature reserve.</td>
</tr>
<tr>
<td>LCS091</td>
<td>Beach defence barbed wire can be seen stretching for over 1.1km just to the west of the beach to the south-east of Minsmere Level, on 1941 &amp; 1943 aerial photographs. The features can also be made out on aerial photographs from 1945.</td>
</tr>
<tr>
<td>LCS094</td>
<td>The remains of an extensive World War II site are visible as structure with associated earthworks close to Goose Hill and Dunwich Forest on 1945 aerial photographs. The site is made up of 2 anti-aircraft batteries and their associated camps (at TM46296517 &amp; TM46496497), which are joined together by a trackway. The trackway then heads off eastwards to an area where there are a number of practice trenches and possible bomb craters that would appear to be some kind of military practice/training area. The trackway which joins all the components of the site is c.1.5km long. Some of the trenches are just about visible on earlier aerial photographs from 1940 but as the run of photographs follows the coast the western extent of the site is unclear. The anti-aircraft batteries are likely to be part of the Diver strip. By the time of the October 1945 survey all that remains of the military camps are the concrete floors of the Nissen-type huts.</td>
</tr>
<tr>
<td>LCS095</td>
<td>An anti-tank ditch can be seen as an earthwork running for c.1.8km between TM47056596 &amp; TM47386459 on 1941 aerial photographs. The obstacle has been created by widening and deepening a pre-existing watercourse, which has resulted in the spoil being heaped up alongside the channels, thus creating the earthwork banks which are visible on the aerial photographs. The feature is also clearly visible on 1943 aerial photographs but by 1945 the spoil banks are less clear and have weathered away somewhat. The water-filled ditch was still extant in 2006.</td>
</tr>
<tr>
<td>LCS099</td>
<td>Various features of World War II date are visible to the eastern end of Minsmere New Cut on aerial photographs from 1940, 1943 &amp; 1945. Traces of activity, in the form of vehicles tracks and general ground disturbance, can be seen in this area on aerial photographs from 1940. There are also some buildings visible, but at this date, they all appear to be civilian buildings. However, there is a small, possibly hexagonal, structure at TM47706624, which may be a pillbox. By 1943, a c.300m length of barbed wire can be seen running between TM47676606 &amp; TM47486584, and there may be a structure (possibly a pillbox) at TM47676610. By 1945, some of the structures in the area have been dismantled, but there appears to be another pillbox at TM47766610. The more northerly pillbox, which could be seen on the 1940 photographs, can still be seen on these later photographs. (cont.)</td>
</tr>
<tr>
<td>HER ref.</td>
<td>Description</td>
</tr>
<tr>
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</tr>
<tr>
<td></td>
<td>The other 'additions' are a number of bomb craters around TM47766619 &amp; TM47766627. These features are all of World War II date, and there was clearly some kind of military activity in this area during that period, although the exact nature of this activity is not clear from just the aerial photographs.</td>
</tr>
<tr>
<td>LCS102</td>
<td>Two World War II barbed wire emplacements in Leiston parish are visible as earthworks and structures on aerial photographs from 1940, centred on TM47076451 and TM47226459. By 1943 they have been absorbed into and superseded by a larger single barbed wire emplacement centred on c.TM47086465. The emplacements may be associated with the Heavy Anti-aircraft Artillery sites located to the west, as they are connected by a length of trackway (see LCS094). The first emplacement at TM47076451 is just over 1 hectare in area and contains a length of trench connecting 4 structures, which may have be either pillboxes or covered bomb shelters. The second emplacement at TM47226459 is approximately 1.1 hectares in area, but also has a roughly circular barbed wire annexe of c.0.2 hectares to the east. This emplacement encloses a 30m long slit trench which runs from TM2736462 to TM47246460, and 5 possible pillbox structures (at TM47236462, TM47226460, TM47226459, TM47226457 and TM47246460), with a further probable structure located in the annexe (TM47326464). By 1943 the trench has been extended to c.90m and extends from TM47206461 to TM57246458. The later, larger emplacement is c.13 hectares in area and is centred on TM47116467. Further slit trenches were located outside the area of the earlier emplacements, but within the bounds of the later larger one, at c.TM47226474, TM47176470 and TM47076465. A cluster of 3 possible structures, one of which is probably a pillbox are visible at c.TM47016462, adjacent to the trackway leading west towards the Heavy Anti-aircraft Artillery sites. It is probable that this site played a specific role in the defence of the Heavy Anti-aircraft Artillery sites, whilst also being a component of the wider coastal anti-invasion defences that were in place along the coast during World War II.</td>
</tr>
<tr>
<td>LCS103</td>
<td>A possible modern wind pump and probable World War II pillbox in Leiston parish are visible as a structure on aerial photographs. A wind pump is marked on the second edition Ordnance Survey map of 1904 in this location. In 1940 a structure is visible at c.TM47396449 on aerial photographs, which possibly appears to have vanes, suggesting a wind powered mechanism). However, vegetation obscures this area somewhat until 1953, and although there is a suggestion of a rectangular structure in this location in photographs from 1943 and 1945, it is uncertain whether this is a deliberate disguise or simply a derelict structure. From 1953 onwards with the clearance of vegetation, a rectangular structure approximately 5m x 3m resembling a pillbox is visible. It is probable that a pillbox was located here to supplement the other anti-invasion beach defences in this area during World War II, although whether it was initially disguised as a wind pump or replaced it sometime between 1940 and 1943 is uncertain.</td>
</tr>
<tr>
<td>HER ref.</td>
<td>Description</td>
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<tr>
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</tr>
<tr>
<td>LCS119</td>
<td>An extensive length of World War II anti-invasion beach scaffolding is visible on aerial photographs as a structure, running for c.7km from TM47836609 to TM47285932. The continuous length of the scaffolding can be seen on aerial photographs from 1941. This stretch of scaffolding terminates at a small strongpoint at c.TM47255931 (HER ref. ARG049) before a second length continues further southwards. Structures visible slightly to the east on the beach on aerial photographs of 1983 might also be the remains of beach scaffolding or the remains of earlier 'dragon's teeth' obstructions. Also seen in field survey of Suffolk Coast - remnants of coastal defences from WWII eroding from sandbank - concrete square with remains of scaffolding poles cemented in. Other block to east. Also concrete blocks visible on mid-tide line 300m-400m N and S of feature. Concrete has rusted metal protruding.</td>
</tr>
<tr>
<td>LCS120</td>
<td>An area of World War II minefield is visible on aerial photographs as earthworks on the beach at Sizewell, centred on c.TM47616461. It covers an area of about 3600 square metres and measures c.150m on its north-south axis and about 25m east west. It is located just to the west of a line of barbed wire (see LCS091) It is first visible as a series of depressions or holes on aerial photographs of 1945, but is very close to a second minefield just to the south (see LCS121) that can first be seen on photographs of 1941, so a similar date for its installation seems likely. The minefield can also be seen on photographs of 1946, although it is unclear whether the mines been removed by this time or not.</td>
</tr>
<tr>
<td>LCS121</td>
<td>A World War II minefield can be seen as earthworks on the beach at Sizewell, centred on circa TM47606430. The minefield covers an area of over 12,000 square metres, and measures roughly 400m by 30m. The area of mines is bounded on the east by beach scaffolding (see LCS119) and on the west by barbed wire (LCS091), making the minefield an integral part of Suffolk's anti-invasion defences. It is first visible on aerial photographs of 1941, but can be more clearly seen on pictures of October 1945. It is also visible on aerial photographs of 1946. It is unclear from 1945 and 1946 aerial photographs whether the mines have been removed or not.</td>
</tr>
<tr>
<td>LCS122</td>
<td>A row of anti-tank cubes is visible as structures on aerial photographs of Sizewell/Leistion, from 1940 onwards. The main row of cubes, as visible on the 1940 photography, runs along the high ground overlooking the beach from c.TM47416449 to c.TM47496351, where it terminates in a small cube bounded enclosure or strongpoint (HER ref. LCS108). From 1941 lateral 'arms' of cubes have been added, at c.TM47416447 at the northern end, and at c.TM47476373 towards the southern end. These run out towards the sea to prevent lateral movement along the beach. The northern arm is c.300m long, the southern about 160m. The complete row of cubes can be seen from 1945 to 1955. By 1975 much of the row has been removed during the construction of Sizewell power station, but a portion of the northern end and the southernmost 'arm' is still <em>in situ.</em></td>
</tr>
<tr>
<td>HER ref.</td>
<td>Description</td>
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</tr>
<tr>
<td>LCS123</td>
<td>A series of pits and trenches are visible on aerial photographs from 1941 onwards as earthworks on the high ground overlooking the beach at Sizewell, centred roughly on TM47546450. They appear at about the same time as the anti-tank cubes LCS122, and follow the same alignment, from roughly TM47466447 to TM47626452. They serve no obvious function, and are probably practice trenches dug at the same time that the cubes were installed. They are clearly visible on photographs of 1945, and can still be seen, although in a much degraded form, on photographs taken in 1975.</td>
</tr>
<tr>
<td>LCS133</td>
<td>Metal and timber remains buried in shingle – possible part of a wreck or the remains of a groyne? Timber appears to be sawn through although much of it eroded by wave action. Metal sheathing bent and buckled and rusty but in fairly good condition. No other groynes visible on beach.</td>
</tr>
<tr>
<td>LCS138</td>
<td>Structures of possible post medieval or modern date are visible eroding from the beach at Leiston, centred on c.TM47866609. They may relate to the World War II beach scaffolding recorded immediately to the west in LCS119. However, a slipway is marked on the second edition Ordnance Survey map of c.1904 in this area and although the features resemble posts rather than a hardened surface, they may relate to the construction of this feature.</td>
</tr>
<tr>
<td>LCS139</td>
<td>A structure of probable post medieval date is visible on aerial photographs of 1983 apparently eroding from the beach at Leiston, centred on c.TM47846606. The feature is probably the remains of a slipway marked on the Ordnance Survey second edition map of c.1904, which matches the general size and orientation of the mapped feature.</td>
</tr>
<tr>
<td>WLN037</td>
<td>A military camp, consisting of a number of Nissen-type huts clustered in a square with interconnecting trackways, can be seen to the north-west of Grisewood Mere, near Minsmere Bird Reserve on 1945 aerial photographs. Some 250m away to the east, connected to the camp by a trackway, are four irregular circular features. The site is a heavy anti-aircraft battery built to counteract the V-1 weapon (Diver). It was armed with four 3.7-inch Mark IIC guns equipped with Predictor BTL, and Radar AA No.3 Mark V when it was deployed here on 24th November 1944, and was manned by 412 Battery of 124 Anti-Aircraft Artillery Regiment. It formed part of 40 Heavy Anti-Aircraft Brigade deployment. The nearby camp would have housed the military personnel who operated the battery. Slightly to the south of the military camp, a gun emplacement and a weapons pit are visible on the 1945 photographs and are presumably associated features. Also in the centre of the field, about 200m south-west of the camp (at TM46856703) a structure is visible on the aerial photographs which may be a pillbox. The buildings of the military camp can be seen to have been dismantled by October 1945, as only their concrete floors are visible on aerial photographs of this date. 2013: Converted for Bat habitation.</td>
</tr>
</tbody>
</table>
A curvilinear section of barbed wire entanglement, c.200m long, can be seen as a structure at the western end of a section of sea bank (HER ref. WLN040) close to Minsmere Nature Reserve, on aerial photographs from 1941 & 1943. This feature is of World War II date and would have been adding to the coastal defences in this area. The obstruction is likely to have been erected there so that the sea bank could not be used as an invasion point. The obstruction has been removed by October 1945. Many such ephemeral structures from World War II were dismantled very soon after the end of the war.

Table 2: WWII related HER entries in vicinity of survey Area B

<table>
<thead>
<tr>
<th>HER ref.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WLN039</td>
<td>A curvilinear section of barbed wire entanglement, c.200m long, can be seen as a structure at the western end of a section of sea bank (HER ref. WLN040) close to Minsmere Nature Reserve, on aerial photographs from 1941 &amp; 1943. This feature is of World War II date and would have been adding to the coastal defences in this area. The obstruction is likely to have been erected there so that the sea bank could not be used as an invasion point. The obstruction has been removed by October 1945. Many such ephemeral structures from World War II were dismantled very soon after the end of the war.</td>
</tr>
</tbody>
</table>

Walkover survey

The walkover survey was carried out on the 18th August 2014. Assets and any pertinent features noted are marked in Figure 5. Descriptions follow below:

**B1:** A line of concrete anti-tank cubes running along the top edge of the beach. Most are roughly *in-situ* although some have tipped over and presumably moved slightly due to being undermined by wave action at extreme high tides and erosion (Plate 10). This is part of the line of cubes recorded on the HER (LCS088). On at least three of the cubes lettering, formed when the concrete was still wet, was noted on one face. The text was as follows: ‘THUR E.H.’ (Plate 11), ‘JWS’ (Plate 12) and ‘EH Lowesto’[ft] (Plate 13).

**B2:** A fragment of heavily corroded steel/iron just protruding from the shingle but firmly anchored (Plate 14). Not possible to positively interpret but probably associated with the securing of beach scaffolding. Stretches of beach scaffolding are recorded on the HER in this area of the beach (HER ref. DUN086).

**B3:** Further anti-tank cubes in the line recorded on the HER as LCS088. Also, what appears to be a length of rail from a narrow-gauge railway, which has probably been reused as a post for securing barbed-wire or beach scaffolding (Plate 15).

**B4:** Further lengths of probable narrow-gauge rail, two pieces of which are jointed at an acute angle, possibly to brace an upright (Plates 16 and 17).

**B5:** An anti-cube but isolated from the line (Plate 18). Probably part of the LCS088 line but has been moved from its original location.
Figure 5. Area B – assets/features noted during survey
B6: Five stubs of firmly anchored scaffold pole protruding from the beach shingle. Probably parts of a beach scaffold defence (Plates 19 and 20). They form a regular pattern and are evenly spaced. Two of the stubs are at an angle suggesting they were braces for uprights.

B7: Length of steel rod anchored in the beach shingle with a ‘bowl’ shaped piece of concrete on the upper end (Plate 21).

B8: Probable anti-cube buried on the beach, only a small part exposed. A length of corroded angle iron or girder lies nearby (Plate 22).

B9: Two lengths of bent scaffold pole lying on the surface of the beach (Plate 23); also two irregular shaped fragments of concrete which are lying slightly further up the beach, one of which has a short length of heavily corroded ‘H’ section girder protruding one side (Plate 24). This is possible part of a defence known as ‘dragon’s teeth’. These comprised a series of steel spikes anchored in concrete and set at an angle pointing out to sea. They were originally placed below the high water mark with the aim of damaging small boats attempting land troops. This example is not in-situ; it was presumably removed and buried higher up the beach shortly after the war but has become exposed by later erosion.

B10: A steel spike emerging from the top edge of the sea defence bank (Plate 25). Possibly part of a dragon’s teeth defence that has been removed from the beach and placed/buried on the higher ground or an upright for a barbed wire obstruction.

B11: North end of a near continuous line of concrete anti-tank cubes (Plate 26). It runs from c.TM 4779 6686 to TM 4776 6622. The majority of the cubes appear to be in-situ although occasional individual cubes have shifted slightly. Runs south in the area behind the sea defence bank before dog-legging to the east. It then continues south before dog-legging back to the west (at B12 – Plate 27) and continuing along the original alignment. Forms part of the extensive line of anti-tank cubes recorded on the HER (LCS088).

B13: Further anti-tank cubes in the line along this beach (LCS088). These appear to have been placed along the top of the sea defence bank but starting to tumble onto the
beach due to erosion of this feature (Plate 28). To the south of this point the cubes become obscured by sand and vegetation although they probably continue along this alignment for a further a considerable distance.

**B14:** A group of scaffold clips lying at the base of the sea defence bank suggesting they have recently fallen from within the bank as it has eroded (Plate 29). Presumably a cache of clips collected when the beach scaffolding was dismantled after the war that was then buried in the high ground.

**B15:** A line of anti-tank cubes running on an east-west alignment. It runs from the low water mark, across the sea defence bank and approximately 50m inland (Plates 30 and 31). The cubes are generally *in-situ* although some are leaning over, or have toppled over, and some have fallen apart. An irregular but roughly linear depression runs parallel to the south of the inland run of cubes (visible in Plate 31). It is recorded on the HER (LCS123) and described as possible practice trenches.

**B16:** A group of rough cylindrical shaped concrete blocks encasing scaffold poles which protrude through the top and bottom of the concrete blocks (Plate 32). Some have horizontal scaffold poles attached or smaller horizontal metal tubes. The lengths that appear to protrude from the tops of the blocks appear to have been sawn off. The group appears to be eroding out of the sea defence bank. They are presumably the bases of beach scaffolding that were probably cleared from the beach and then buried after the war but are now becoming exposed by erosion of the sea bank. Beach scaffolding is recorded in the HER as having been present along the majority of the survey area during WWII (DUN086, LCS088, LCS091 and LCS119). Evidence for this was noted throughout the survey area with regular sightings of scaffold clips that were presumably discarded and lost during the dismantling of the beach defences (Plate 33).

**Projected asset loss**

The majority of the known assets within Area B, as recorded in the County HER, lie behind the projected long term coastline and are therefore not under immediate threat. Those that lie on the beach, such as the line of beach scaffolding towards the northern end of the survey area (DUN086) and the northern sections of the anti-tank cube line (LCS088) have, on the whole already been lost. That said, some remnants of the beach
scaffolding, the probable relocated remains of ‘dragons teeth’ and an occasional anti-tank cube lie just above the high water mark and it is this sort of fragmentary evidence that will be lost within the next few years. It also highly probable that further sections of the line of anti-tanks blocks will be disturbed, particularly towards the southern limits of the survey area.

Area C

The survey area comprised a 2.5km long stretch of coast running south from the mouth of the River Blyth adjacent to the town of Walberswick (TM 5041 7473 to TM 4875 7281). The coastline along this stretch runs along the edge of an area of low lying marshland named, Corporation Marshes and Old Town Marshes, which lie either side of the Dunwich River. This area is protected by large sand dunes and/or shingle banks. The beach between the high and low water marks is primarily sand with some shingle.

A total of ten entries relating to WWII sites are recorded on the County HER, details of which can be found in Table 3 below. It should be noted that the locations recorded on the HER are primarily based on aerial photographs taken in the 1940s and that many of these, as shown in Figure 6, now lie below the present low water mark as a result of the coastal erosion that has occurred in the area to the south of the breakwaters at the mouth of the River Blyth.

<table>
<thead>
<tr>
<th>HER ref.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUN029</td>
<td>Barbed wire beach defences and defensive scaffolding can be seen running along the beach between Walberswick and Dunwich on a number of aerial photographs from the 1940s. Various sections of scaffolding and barbed wire form a more or less continuous length of defences along the beach, covering more than 5.5km. The defences run between TM50417478 &amp; TM47866988 and include a small area of minefield at TM48047109. Additional defences in the form of vertical poles possibly set in concrete, known as 'dragon’s teeth', can also be seen in the breakers on oblique photographs of 1941.</td>
</tr>
<tr>
<td>DUN031</td>
<td>A square structure, c.7.5m across, is visible at TM49067316 on 1941 aerial photographs, on the beach to the south-east of Walberswick. An attached blast wall also seems to be visible on the photograph. It is located between two stretches of beach defence scaffolding, and is of World War II date. The structure can still be seen on aerial photographs from 1945.</td>
</tr>
</tbody>
</table>
Figure 6. WWII related HER entries within vicinity of survey Area C
<table>
<thead>
<tr>
<th>HER ref.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUN032</td>
<td>A rectangular structure, c.15m long, is visible on the beach to the south-east of Walberswick on 1941 aerial photographs. It may be a pillbox, of unknown type, and is close to another pillbox (DUN031). These structures would have formed part of the World War II defences in this area. The structure is still visible on an aerial photograph from 1945.</td>
</tr>
<tr>
<td>SWD023</td>
<td>A line of anti-tank cubes just over 1km long can be seen on Southwold beach on aerial photographs from 1940. They are still visible, on the whole, <em>in situ</em> on photographs from 1943. A square structure, c.5m across, is visible at a gap in the line of anti-tank cubes, at TM50657523. This seems most likely to be a pillbox, also forming part of the defences.</td>
</tr>
<tr>
<td>SWD026</td>
<td>Various stretches of barbed wire can be seen on the beach by the southern part of Southwold on 1941 aerial photographs.</td>
</tr>
<tr>
<td>SWD038</td>
<td>A number of sections of barbed wire obstruction are visible between TM503748 and TM500744, as structures, on 1941, 1943 and 1945 aerial photographs. On the 1943 and 1945 photographs, a strip of minefield, c.270m long, to the north-west of the barbed wire can also be seen. To the north of these features, on all the aerial photographs, is a 200m length of anti-tank cubes.</td>
</tr>
<tr>
<td>WLB041</td>
<td>An irregular line of anti-tank cubes, c.350m long, can be seen as a structure on grassland and the beach to the west of Walberswick on an aerial photograph from 1940. The anti-tank cubes can also be seen on later photographs, from 1945, by (cont.) which time there appears to be a system of trenches with adjacent banks associated with the anti-tank cubes. There also seem to be two structures placed among the anti-tank cubes, at TM50017448 and TM50037452, which would presumably have served a military function.</td>
</tr>
<tr>
<td>WLB042</td>
<td>An L-shaped section of barbed wire obstruction, c.230m long, can be seen as a structure on grassland close to the beach west of Walberswick on 1941 and 1945 aerial photographs. The barbed wire is interrupted by a line of anti-tank cubes (WLB041).</td>
</tr>
<tr>
<td>WLB043</td>
<td>A section of barbed wire obstruction c.150m long is visible as a structure between TM50037433 &amp; TM50097456 on 1941 aerial photographs. The barbed wire is not visible on aerial photographs by 1945, but there does appear to be a small square structure at TM50017444, which may well be a pillbox.</td>
</tr>
<tr>
<td>WLB045</td>
<td>A small cluster of 10 structures, c.2m across at the most, can be seen on the beach to the south-east of Walberswick on aerial photographs from June 1941. There is (cont.)</td>
</tr>
</tbody>
</table>
also a larger structure, which would appear to be a pillbox, at TM49967438. The function of the smaller features is unclear, and it may be that they are temporary features, or possibly military supplies, laid out in storage. On aerial photographs from November 1941, the larger structure is still visible in situ, but the smaller features are in a much less regular order, and there do not appear to be quite so many of them. This suggests that they were either items being stored near the pillbox, or possibly temporary structures.

| WLB050 | A bomb crater, c.13m in diameter, is visible on 1941 aerial photographs, to the east of Walberswick. It is of World War II date and can still be seen on photographs from 1945. |

Table 3: WWII related HER entries in vicinity of survey Area C

Figure 7. Area C – assets/features noted during survey
Walkover survey

The walkover survey was carried out on the 19th August 2014. No assets relating to WWII were positively identified on the beach or the adjacent shingle bank. The only finds were an occasional scaffold clip (Plate 34), remnants of the extensive runs of beach scaffolding, as recorded on the HER (DUN029).

The only features of note within Area C were two lines of anti-tank cubes located near a car park accessed off Ferry Road (Fig. 7). They comprise a near continuous run, 170m in length, which starts at a dislodged example on the edge of the beach (Plates 35, 36 and 37) and ends adjacent the Dunwich River, although there is small gap at an access point and a larger gap towards the northern end. They correspond with part of a series anti-tank cube lines recorded on the HER (WLB041). A second line of anti-tank cubes is also present c.30m to the east (Plate 38) although these do not correspond with any defences recorded on the HER, which suggests they are actually the missing blocks from the original which have been relocated, possible to prevent vehicle access to the area to the east of this second line. It was noted that they are not regularly spaced or precisely aligned, unlike other examples, which could be seen as further evidence for them having been relocated since WWII.

Projected asset loss

All the beach defences along this stretch of the coast have already been lost to erosion although an extant lines of anti-tank cubes remains in the area adjacent to the village of Walberswick, which will be under threat from erosion over the next few decades. Additionally, an area of barbed-wire obstructions and a further line of anti-tank cubes are known by record (SWD038) in an area that is currently being eroded. It seems likely that within 100 years all these features will be lost to erosion.
Area D

An additional survey area was considered. It would have comprised a 3.8km stretch of coast running north from the town of Southwold (TM 5125 7711 to TM 5227 8076) but map regression revealed that the 1930s coastline lay between 200m and 300m out from the present low water mark (Fig. 8). Consequently, as any potential WWII assets that may have existed would have already been lost to the sea, this survey was abandoned.

Figure 8. Area D – extent of proposed survey and former low water mark
4. Conclusions

The surveys have revealed that there are indeed a number of WWII assets surviving within the sample areas, although on the whole these are fairly limited. No previously unknown sites were identified but this is primarily due to the results of the NMP which has created what appears to be a highly accurate and fairly comprehensive record of all the WWII defences that were built along the Suffolk coast. What the NMP does show (as presented by the County HER) is exactly how busy the Suffolk coast was during the war period; a phenomenon that is directly related to the perceived threat of invasion along this area of coast. This is due to a combination of factors; its proximity to the mainland Europe, the multitude of open sand and shingle beaches that were suitable for landing a large force, the presence of large estuaries, and the relatively short distance to London.

The defences that were installed along the Suffolk coast would, at a basic level, have consisted of minefields, barbed-wire obstructions, lengths of beach scaffold, which comprised great banks of upright and horizontal scaffold tubes anchored in place along the beach to prevent access to landing craft, ‘dragons teeth’ (submerged steel spikes), and lines of anti-tank cubes. These passive defences would also have been reinforced with strongpoints consisting of searchlights, trench systems, pillboxes and machine-gun, other larger gun-emplacements and anti-aircraft gun emplacements. Other defences would have consisted of radar sites and barrage balloon tethering sites and larger calibre guns placed inland at ranges that allowed them to cover coastal areas.

Many of these defences were highly dangerous, such as the minefields, barbed wire obstructions, and anti-aircraft emplacements, and these were carefully removed shortly after the war. Following this the other, less hazardous, defences would have been dismantled, such as the miles of beach scaffolding, although after a number of years standing in a salty atmosphere very little would have been suitable for re-use and consequently much of it was discarded. The more innocuous defences, such as the anti-tank cubes and pillboxes, were generally left in place and it is these that are still extant on the Suffolk coast in relatively large numbers.

The results of the survey backup the above assumptions, as anti-tank cubes and pillboxes were the most obvious assets still present on the coast. It is only due to
coastal erosion that remnants of the scaffold defences are becoming exposed and in general what is being revealed consists of the discarded remains that had been buried after their removal from the beaches. Other than the one small area of possible scaffold uprights in Area B (B6), it is only along the Bawdsey beach, with the numerous steel uprights set in concrete, that in-situ, or near in-situ, remains of what is possibly beach scaffold was noted. That said, the interpretation of the Bawdsey features is not conclusive as they do not conform with the common methods for anchoring beach scaffolding. Also, beach scaffolding is only recorded as having been placed in limited areas along this beach. It is therefore possible these are associated with some other form of defence, such as barbed wire entanglements. It is possible they relate to some form of defence against coastal erosion although on the balance of probabilities, and given their location, they are more likely to be associated with WWII defences.

The effects of coastal erosion were a major factor at the Bawdsey and the Walberswick survey areas. At Walberswick, other than the anti-tanks cubes situated on or behind the existing sea defences banks, all WWII assets appeared to have been lost to historic erosion. At Bawdsey, however, the erosion appears to be a recent phenomenon as numerous assets that were recorded on the HER as being in good or fair condition during a rapid coastal survey undertaken in 2002 are now lying on the beach and in the case of one pillbox (BAW178), about 50m below the present high water mark. Only part of one the recorded pillboxes (BAW176) is still extant on the cliff and, assuming the erosion is still active, this is also likely to be undermined in the near future (definitely lost within 25 years but probably a lot sooner). This erosion appears to be related to the construction of the sea defences between the East Lane Battery and the Martello Tower, which were built to counteract erosion that was threatening the Martello Tower and the adjacent houses.

The coming decades will undoubtable see further changes in all three survey areas, although it is in Areas A and C where erosion seems potentially most destructive with relatively substantial areas of land likely to be lost. Numerous assets lie in these areas either as extant visible monuments or as buried archaeological features.

Managers of other areas of coastline can refer to the published guides to WWII archaeology in Suffolk (Liddiard & Sims 2014) and the SMP for an insight into the scale of coastal change likely to affect the WWII heritage on their sites.
5. Recommendations

Of the features noted during the surveys it is quite clear that some do pose a potential hazard to beach users. Those of most concern would be the line of steel uprights in concrete on the beach at Bawdsey (Area A). These are exposed at low tide and are unsightly as well as hazardous but it is at high tide when the majority would be hidden under water that they could potentially cause serious injury to bathers. Other potential, but minor hazards, are the occasional pieces of scaffold pole, lengths of rail and the possible dragon's teeth remnants at Sizewell (Area B) but as these are unlikely to be in-situ their removal should be straight-forward. The series of sawn-off scaffold uprights at Sizewell (B6) are a potential trip hazard and could warrant removal, although these are probably deeply anchored and as such would require digging out. If this is carried out they may be worthy of further record once fully exposed.

Few, if any of the identified assets clearly merit any further study. The pillbox on the cliff top at Bawdsey will undoubtedly fall at some point in the near future and as it is the remains of an unusual combination of a type 22 and 23 pillbox is worthy of detailed recording, assuming this hasn't been carried out already. Any remains that are to be removed should, at a minimum, be photographed after exposure and their locations accurately plotted, particularly if thought to be in-situ. It may also be useful to undertake a survey the present cliff line at Bawdsey to provide a record of the levels of erosion that have occurred at this site. This could be easily carried out using GPS equipment.

6. Acknowledgements

The survey was undertaken by Linzi Everett and Mark Sommers of the Suffolk County Council Archaeological Service Field Team (now Suffolk Archaeology Community Interest Company [SACIC]).

The project was overseen by Dr Rhodri Gardner, Contracts Manager for the SCCAS Field Team (now at SACIC), and the project was initiated and the funding secured by Bill Jenman, Touching the Tide Project Manager.
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8. Plates

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