

# Coastal Zone Assessment Survey Aberdeenshire & City of Aberdeen: Cullen to Milton Ness

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## Key Findings

The Aberdeenshire coastline, stretching from the Moray Firth in the north to the outer Firth of Forth in the south is highly variable based on geology, geomorphology, and aspect. Sections of dramatic cliff interspersed with sandy bays and tiny coves give way to extensive swathes of open beach backed by dune systems. The southern section is characterised by low-lying soft sediment topped rock platform. The walkover survey targeted areas which are modelled to be at moderate or high risk of erosion by 2030. These generally comprised low lying and soft coasts although the surveys also sampled sections of hard rock headlands and cliffs.

Sand and shingle bays and longer sand strands north of Aberdeen experience both seasonal and long-term net erosion and accretion. The coast showing the most extensive net erosion is the stretch of sandy beach from Blackdog to the Bridge of Don in the City of Aberdeen. South of Inverbervie, erosion was observed to be affecting short sections of this largely stable low-lying coastline.

Three hundred and twenty-three archaeological and built heritage sites were visited and documented by SCAPE officers and volunteers. Seventy-seven of these were not previously recorded in heritage records.

The two largest categories of sites reflect the significant military presence along these coasts during the Second World War, and the significant fishing heritage of the region. Thirty three percent of records in Aberdeenshire (and 72% of records along the short stretch of coastline surveyed within the City of Aberdeen) are related to the defence of Britain's coasts from invasion during WW2. Thirty two percent of sites relate to maritime infrastructure mostly to do with fishing and harbours.

Twenty of the surveyed sites have been identified as a priority for monitoring and in some cases further investigation and recording, due to a combination of their vulnerability to coastal erosion and structural deterioration and their archaeological, as well as their regional heritage and social historical significance. The site types are varied and include:

- Former fishing stations between Aberdeen and Stonehaven;
- A group of landing places and associated winches and other fishing related features along the shore around Inverallochy;
- A group of WW2 sites at Foveran Links comprising anti-landing scaffolding, an uncommon type of pill box, gun emplacements and decorated anti-tank cubes;
- Four sites within Forvie National Nature Reserve relating to landscapes of resource exploitation and human activity, including shell middens and lithic scatters;
- Structurally unstable buildings and structures, situated perilously close to cliff edges, such as Slains Castle, Boddam Castle, former fishing bothies, quarry houses and limekilns at Milton of Mathers, Redhaven and Sandend; and St John's Churchyard situated high on a cliff top above Gardenstown which could be at risk due to landslip.

## 1. Introduction

This report presents the results of a Community Coastal Zone Assessment Survey (CCZAS) of the Aberdeenshire coast from Cullen at the Moray-Aberdeenshire council boundary to Milton Ness at the Aberdeenshire-Angus council boundary. The survey area also included a stretch of coastline from Blackdog to Bridge of Don which falls within the City of Aberdeen council boundary (Figure 1). Aberdeenshire has a long, varied, and often dramatic coast, with the character of the coastline changing with a change in geography and underlying geology from the southern coast of the Moray Firth to the open North Sea. The coastal environment varies from high rocky cliffs punctuated with small bays and long sections of sandy beaches backed by dune systems. South of Inverbervie, the character of the coast changes again to low-lying rock platform and soft sediment terraces.

The coastline of Aberdeenshire had not previously been covered by a CCZAS. The aim of the survey was to characterise and assess the condition and vulnerability of the coastal archaeological resource along stretches of coastline identified as being at moderate to high risk of erosion by 2030. Most of the accessible coastline falling into this category was walked by SCAPE officers and volunteers over several separate surveys between May 2022 and May 2023. The exceptions to these were the beach in front of the St Fergus gas terminal and St Fergus links and a short section of beach in front of Menie Links. Existing heritage records for these stretches were overwhelmingly related to World War 2 (WW2) anti-invasion defences, and we learnt from surveys of long stretches of similar beaches that visibility of any other heritage is very poor in these terrains. Several short sections of hard coast were also walked. The surveys were designed to involve volunteers and benefited from information from volunteers about local heritage and recent coastline change.



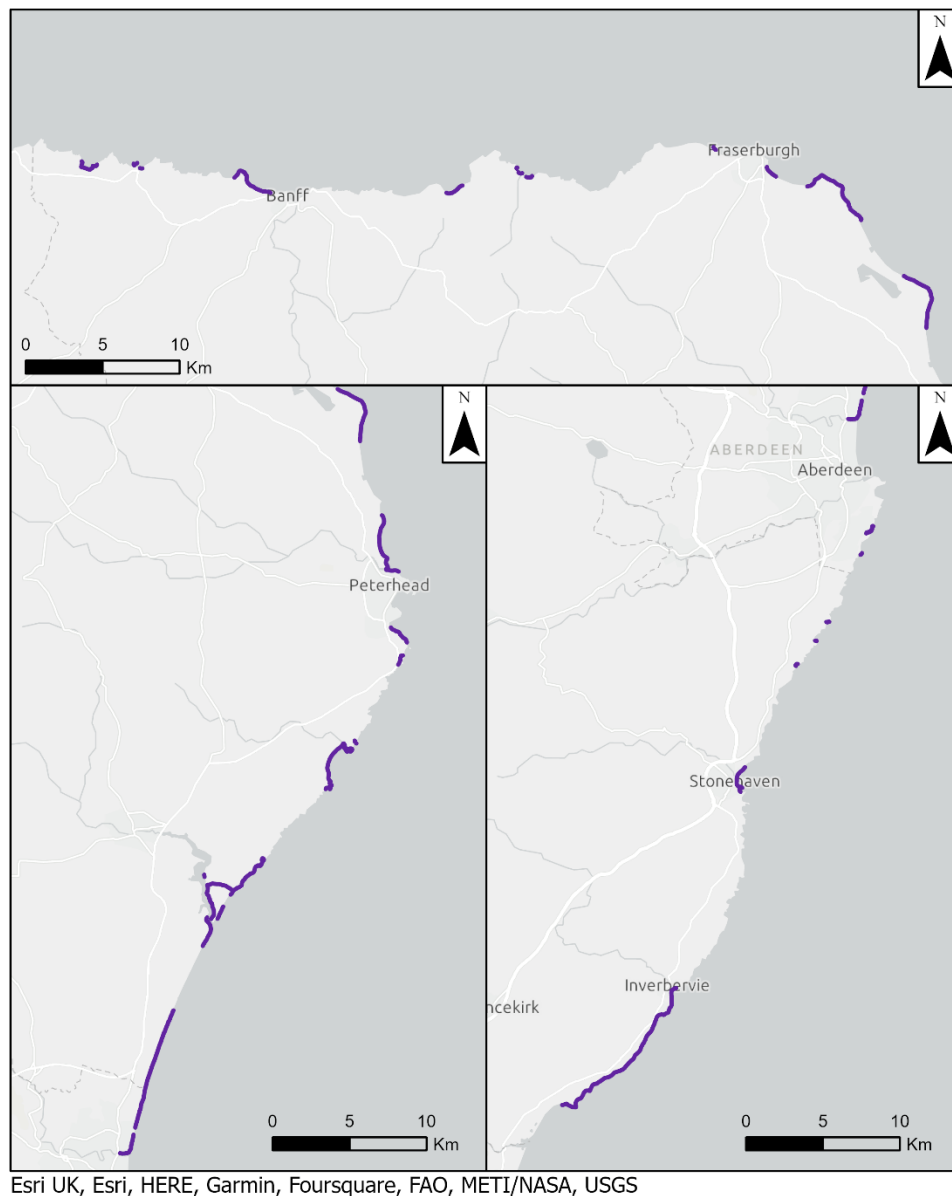


Figure 1. Survey area with stretches walked highlighted in purple.

## 2. Project aims and objectives

The overarching aim of the survey was to identify and characterise archaeological sites and areas that are likely to be impacted by coastal erosion and other threats in the short to medium term.

Survey objectives were to:

- Identify the most vulnerable sections of coastline through desk-based assessment to target fieldwork to coastlines experiencing erosion,
- Involve volunteers from local communities and societies in the field surveys,
- Locate and record archaeological sites at the coast edge and intertidal zone,
- Assess the condition and vulnerability of the sites,
- Assess the field evidence for coastline change during the walkover survey,
- Share results with Aberdeenshire Council and Historic Environment Scotland.

### 3. Methodology

#### 3.1. Prioritisation of field walkover survey areas

In advance of the walkover surveys, desk-based analysis of models of national coastal susceptibility and national coastal change were undertaken to understand the vulnerability of the coastline and target areas for walkover survey. Two models were combined; a coastal erosion susceptibility model (Fitton et al. 2016) and a model of projected coastal erosion rates by 2030 (Dynamic Coast, Hurst et al. 2021). The coastline was divided into 0.5 km<sup>2</sup> grid cells and each cell assigned a score based on the combined results from each model. Grid cells coloured yellow, orange and red contain coast which will experience erosion by 2030, with red cells having the highest score from both underlying models. The methodology used to combine the models is outlined in a short methodology report, available at: <https://scapetrust.org/wp-content/uploads/2023/02/CCZAS-prioritisation-methodology.pdf>.

The resolution of 0.5 km<sup>2</sup> grid cells was chosen to give a broad overview of the nature of the coastline for walkover planning purposes (Figure 2). Within a red or orange grid cell there may be areas of accretion or no erosion, however the cell will also contain coastline with moderate to high susceptibility of erosion by 2030.

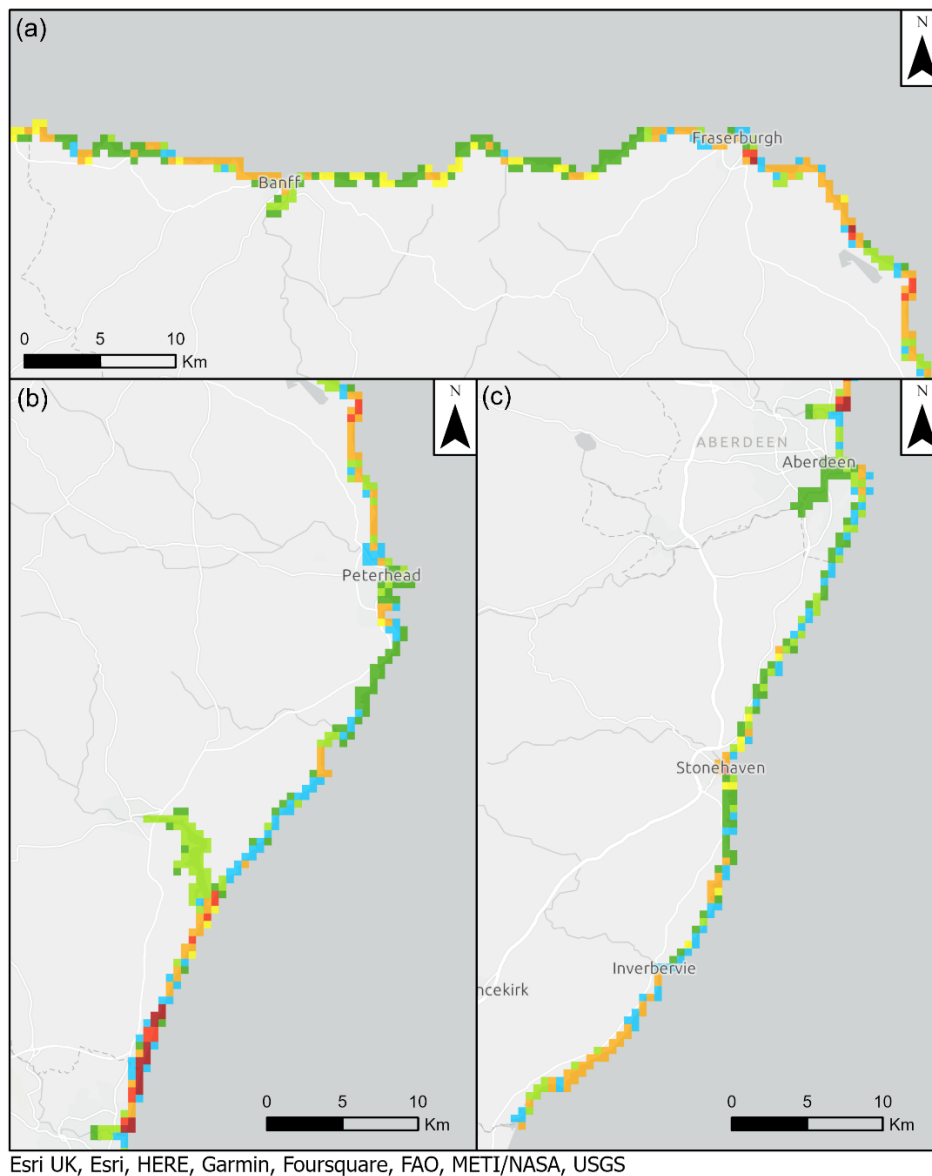


Figure 2. Modelled vulnerability of the Aberdeenshire and Aberdeen coastline. Red, orange and yellow cells denote coast which is experiencing erosion and therefore targeted during the 2022 CCZAS survey. Green cells denote coast that is not experiencing erosion and blue cells denote areas where there is a conflict between the models, or which are only included by one model.

### 3.2. Preparation of coastal heritage baseline

Aberdeenshire Council and Historic Environment Scotland provided information and point data of all existing known heritage sites within a coastal strip extending 500m either side of the mean high-water springs. This data was integrated into a single database and imported into ArcGIS 10.7. The point data was buffered by 25 m and sites falling within 100m landward and 500m seaward of the mean high-water springs were selected except where Dynamic Coast 2100 erosion projections extend landward greater than 100m, in which case the zone was widened. The selected sites were then refined to screen out sites not relevant to the surveys. Table 1 presents information on main categories of sites removed from the coastal heritage baseline.

Site Category	Reasoning
<b>Shipwrecks and other poorly located sites</b>	<p>Site records with only approximate coordinates (e.g. bottom left corner of a km grid square) were removed from the database due to the inability to accurately locate during fieldwork.</p> <p>Shipwreck records are often poorly located with multiple wrecks plotted in the same grid square corner.</p> <p>When wrecks were noted on our surveys, these were checked against the shipwreck database and linked to the correct record where identifiable.</p>
<b>Urban records</b>	Records which are not at threat from coastal processes in urban coastal areas. This includes listed buildings, market squares, plaques, and memorials.
<b>Findspots and relocated heritage</b>	Site records where finds were discovered and are no longer there or sites recording the original locations of objects which are now held in museums.
<b>Miscellaneous</b>	Golf courses and general location records e.g. General Views

Table 1. Categories of sites removed from database.

The resulting sites were uploaded to SCAPE's interactive Sites at Risk web map and published to the linked SCAPE Coastal Archaeology Recording App (Figure 3). This app was developed for the project. It allows users to access the location and summary information about known sites, update existing site information and create new site records, including photographs and point and polygon location information. Satellite imagery and historic map layers provide additional information for users in the field. All features of the app are fully functional offline.

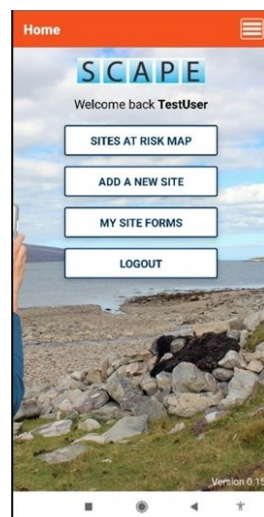


Figure 3A. App Home Screen

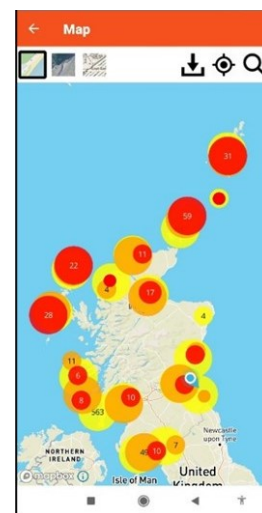


Figure 3B. Interactive Sites at Risk Map

Site markers are initially coloured green to indicate that they have not yet been visited and updated during the CCZA survey. Once visited and moderated, a colour code is assigned to each marker to reflect the priority status of the site based on archaeological significance and physical vulnerability (see section 3.4).

### 3.3. Field survey

Due to the scale of the Aberdeenshire coastline, as well as the inaccessibility of large sections of the hard rocky coastline, it was not possible to undertake walkover survey of the whole coastline and most areas of high rocky cliff lines were not walked. Sections identified as soft coast in nature and susceptible to erosion were either walked in their entirety or a sampling strategy was undertaken where it was not possible to walk entire sections of vulnerable coast. Surveys were timetabled during periods of each month with the lowest tides and each walk was undertaken three hours either side of that day's low tide to gain the most visible exposure of the intertidal zone. SCAPE officers and volunteers generally walked along the coast edge with good views over the intertidal zone and hinterland, deviating to visit known sites and to check features and anomalies. At Sands of Forvie, the survey also deviated from the open coast and included a round walk through the landscape of past human activity within the sand dunes and along the river Ythan.

### 3.4. Moderation of records

After each walkover, the data collected using the app was submitted to the website and moderated by SCAPE officers. Moderation ensures that data is consistent and meets the standard required by Canmore and Aberdeenshire HER. During moderation, the significance, condition, and vulnerability of each site was also assessed, and a priority based upon site significance and threat from erosion assigned. SCAPE applies a colour code to denote priority for action. Yellow indicates no action and is applied to sites of either low archaeological significance, and/or sites generally not threatened by erosion. Orange indicates monitor and is applied to sites of medium to high significance, or potential significance, under potential threat from coastal erosion. Red denotes action required and is applied to sites of high archaeological significance or potential significance which are observed as being impacted by coastal erosion (Hambly 2017, p. 11). These categories are not fixed and updated information, either not available during the survey, or as a result of monitoring or further investigation may result in the priority status of a site changing. Moderated sites are then published and information publicly available on the SCAPE Sites at Risk web map. Sites not visited in the surveys retain their green marker and are visible only to registered users.



## 4. Results

### 4.1. RESULTS: Coastal Change

#### 4.1.1. Summary of coastal change

The surveyed coastline stretching from Cullen on the northern Aberdeenshire coastline to Milton Ness in the east is long and very variable, both in terms of the underlying geology and coastal geomorphology.

The coast along the northern edge of the county is characterised by sandy bays separated by longer stretches of high cliffs. Erosion was noted east of Sandend Bay where a potential lime kiln was recorded eroding out of the coast edge and also along Redhaven Bay, a couple of hundred metres further east, where the remains of post-medieval buildings are perilously close to the eroding coast edge. Erosion of the coast edge was also noted in smaller coves nestled within the high cliffs such as at Pennan Mill Shore.

As the coastline turns the corner and attains a north-south orientation from Fraserburgh and Cairnbulg to Peterhead, it becomes a coast of almost continuous stretches of sandy beach backed by dunes along the open North Sea coast. The periodic exposure and reburial of wrecks within the intertidal sands show how dynamic the coastline here is, both in terms of erosion and accretion.

Except for Sandford Bay and Cruden Bay the coastline south of Peterhead is dominated by high cliffs up to the Forvie National Nature Reserve.

Cruden Bay displays the typical south to north (or along the north coast, west to east) erosion/accretion pattern of sediment movement controlled by longshore drift that we observed in many of the sandy bays walked.

From Forvie to the City of Aberdeen there is uninterrupted sandy beach backed by extensive dune systems. This section of soft coast on the exposed North Sea coastline is highly dynamic resulting in both seasonal and long-term trends of erosion and accretion. Long stretches are being affected by erosion.

South of the City of Aberdeen, the coastline is once again dominated by high cliffs with numerous tiny coves and bays.

The final section of coast between Inverbervie and Milton Ness is composed mainly of flat low-lying terraces and rock platform. This stretch of low-lying coast edge is broadly stable; however, erosion is affecting several short sections.

#### 4.1.2. Increased erosion around coastal defences

We observed several places of exacerbated erosion on either side of coastal defences installed along low-lying rocky and shingle shores especially south of Inverbervie. Good examples can be seen at Seagreens (Figure 4A) where rock armour and gabion cages have been installed along the coast, as well as all manner of ad hoc defences in front of the caravan park at Mill of Mathers. Seagreens is also experiencing erosion of the revetment wall close to the harbour (Figure 4C).



Figure 4A. Hard coastal defences in the form of rock armour and gabions. Evidence of failure of gabions, Seagreens, Aberdeenshire.



Figure 4B. Erosion of coast edge, Johnshaven, Aberdeenshire.



Figure 4C. Erosion of revetment wall, Seagreens, Aberdeenshire.

#### 4.1.3. World War 2 heritage as a marker of coastline change

Alignments of in situ anti-invasion tank cubes and pill boxes which defended Britain in WW2 tell the story of a changing coastline over the 80 years since their construction. Historic environment records of previously visible lines of anti-tank cubes and pill boxes which were not visible on our survey have since been buried under the shifting sands, such as those at Foveran Links where only a couple of mostly buried examples were recorded ([SCAPE ID: 14509](#), [15744](#)). Conversely, at Blackdog Burn where nine anti-tank cubes were documented in historic environment records, we counted 22 south of the burn and over 100 cubes north of the burn ([SCAPE ID: 14835](#)).

A clear demonstration of the trend of net erosion along the south end of Cruden Bay is given by the undermining of a pillbox that guards the approach from the south ([SCAPE ID: 14811](#)). Further north along the bay the site of a further pillbox is now deeply buried in the dunes ([SCAPE ID: 14908](#)).

Along the highly dynamic coastlines between Balmedie to the Bridge of Don, WW2 defences show just how much change has occurred. Two pillboxes at Balgownie Links, City of Aberdeen,



are now in the wave zone (Figure 5A and 5B). Further examples at the Burn of Mundurno, Blackdog and Milden Links, have recently rolled and slid down the faces of shifting dunes (Figures 5C and 5D).

Interestingly, the concrete anti-tank cubes and associated structures, installed to defend Britain from invasion, may now be playing a secondary role as a kind of coastal defence, trapping sediment, and slowing erosion of mobile beach strands and dunes.



Figure 5A. Mostly buried remains of Type 24 pillbox, Balgownie Links, City of Aberdeen (<https://scapetrust.org/sites-at-risk/site/15037> ).



Figure 5B. Split apart pillbox in the wave zone, Balgownie Links, City of Aberdeen (<https://scapetrust.org/sites-at-risk/site/15044>).



Figure 5C. Upside down pillbox, Blackdog, City of Aberdeen (<https://scapetrust.org/sites-at-risk/site/15098>).



Figure 5D. Pillbox slumped down dunes, Milden Links, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/15767>).

#### 4.1.4. Notable areas of erosion (clockwise from the Moray Aberdeenshire council boundary)

##### *Gardenstown*

Gardenstown, Crovie and Pennan were visited by SCAPE officers to assess the extent of the problem of cliff erosion and slumping in the area. Recent cliff erosion was noted close to the harbour at Pennan (Figure 6A). At Gardenstown, the boundary wall of St John's Church is at risk due to slope failure of the cliff. (Figure 6B). Communities in these former fishing villages, which occupy a thin strip of land between cliff and sea, are particularly vulnerable to the impact of both cliff failure and coastal erosion (Figure 6C).



*Figure 6A. Slope failure adjacent to Pennan Harbour, Aberdeenshire.*





Figure 6B. St John's Church, Gardenstown, Aberdeenshire, at risk of future cliff erosion and landslip (<https://scapetrust.org/sites-at-risk/site/14562>).



Figure 6C. View from St John's Churchyard showing the location of the villages of Gardenstown, and Crovie beyond, squeezed between sea and cliff.

In the small bay Between St John's church and Gardenstown only a fragment of wall in the coast edge survives of a building depicted on the 2<sup>nd</sup> edition of the Ordnance Survey. A 20<sup>th</sup> century concrete sea wall to protect the building has also succumbed to erosion.





Figure 6D. All that survives of a building and concrete seawall in the bay west of Gardenstown Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/15530/>)

#### *Pennan Mill Shore*

A similar example of recent erosion upon coastal buildings was encountered just west of Pennan at Mill Shore. Within the coast edge is the remains of the north wall of a large enclosure, the south wall of which is still standing (Figure 7A). Historic Ordnance Survey mapping shows that since 1969 approximately 9 metres has been lost here through coastal processes.

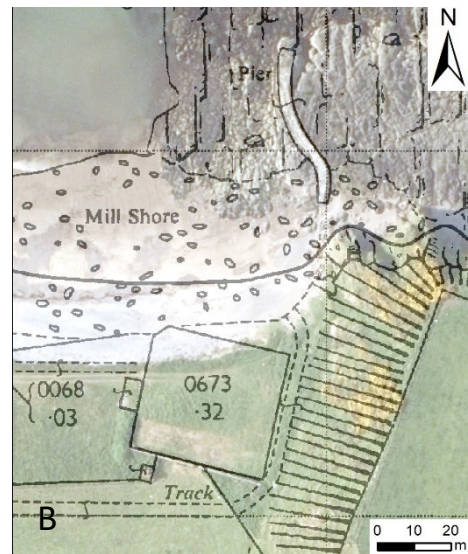


Figure 7A. Mortared stone wall eroding out of coast edge, Pennan Mill Bay (<https://scapetrust.org/sites-at-risk/site/15529/>); B. Comparison of modern coast edge aerial photography from 2021 (@Getmapping Plc, 2023) and National Grid 1:2500 1<sup>st</sup> Edition mapping from 1969-70 (Crown Copyright 2023, EDINA supplied service). There has been ~9m of coastal erosion in the last 50 years.

#### *Sandhaven Harbour*

The large harbour at Sandhaven has been breached and is being damaged as a result of wave action due to a lack of maintenance of the infrastructure (Figure 8).





Figure 8. Deterioration of Sandhaven Harbour, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/14637>).

#### *Inverallochy*

The low-lying coast at Inverallochy is showing erosion in some places, with some encroachment nearing properties located on the coast edge (Figure 9).



Figure 9. Coastal erosion, Inverallochy, Aberdeenshire

#### *Sandford Bay*

At Sandford Bay, severe erosion along the south end of the bay has perhaps been exacerbated by the adjacent hard coastal engineering and water discharge outlet for the nearby Peterhead Power Station (Figure 10). The severity of the erosion had resulted in the closure of the coastal path at the time of the CCZAS.





*Figure 10. Coastal erosion, Sandford Bay, Boddam, Aberdeenshire.*

#### *Newburgh and Sands of Forvie*

Recent erosion of the soft dune coast edge at Newburgh, Udny Links and the southern end of the open coast at Sands of Forvie were noted on the CCZAS (Figure 11A). Both of these sections of coast could be experiencing enhanced erosion due to their proximity to the channel and mouth of the river Ythan. Aeolian erosion dominates within the sand dune systems of Forvie and Foveran Links resulting in natural dune migration that both reveals and subsumes archaeological sites and material (Figure 11B)



*Figure 11A. Erosion of coast edge with recent vegetation slumping, Udny Links, Aberdeenshire.*





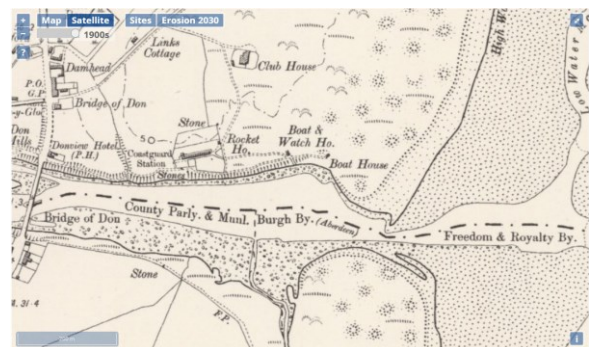
Figure 11B. General view of mobile sand dunes in parts of Forvie nature reserve, Aberdeenshire. Lithic scatters previously recorded in this location are currently buried.

## Blackdog to Bridge of Don

The areas showing the highest level of sustained erosion are the beaches and dune systems between Blackdog and the Bridge of Don. This stretch of coast was highlighted in the desk-based study as having both a very high underlying susceptibility to erosion and very high rates of erosion by 2030. Modelling by Dynamic Coast predicts hundreds of metres of coastline regression here by 2100. The CCZAS found this stretch of coastline to be showing more severe erosion relative to the rest of the coastline walked during the Aberdeenshire and City of Aberdeen CCZAS, although the erosion rates projected cannot be verified on a single field visit. The scale of the sand dune systems may mitigate against the more extreme scenarios of coastal loss. The most significant erosion has occurred at Donmouth North due to the northward migration of the river channel as it outflows into the North Sea (Figures 12A and 12B).



Figure 12A. Screenshot from SCAPE's Sites at Risk map of the position of the channel in a recent satellite image of the mouth of the river Don.



*Figure 12B. Screenshot from SCAPE's Sites at Risk map of the position of the channel on the 2<sup>nd</sup> edition Ordnance Survey (c. 1900) at the mouth of the river Don.*





*Figure 12C. The position of anti-tank blocks indicate the extent of dune face regression at Balgownie Links, Donmouth North, City of Aberdeen.*

#### *Inverbervie – Milton Ness*

This section is comprised of generally stable low-lying shingle and rock platform terraces. However, notable stretches of erosion occur between Milton of Mathers and Seagreens, and between Gourdon and Inverbervie. In places erosion has been exacerbated on either side of recent rock armour and gabion basket coastal defences. These coastlines are an important amenity area and erosion is encroaching on coastal paths and damaging buildings and structures.



*Figure 13. Erosion of coast edge encroaching on path, Inverbervie, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/15793>).*



#### 4.2. RESULTS: Built heritage and archaeology

Sites were categorised into broad site types to aid discussion (Table 2) and a breakdown of the percentage of each site type recorded during the survey is provided (Figure 14). An overview of the main findings is given below followed by a short section highlighting notable sites and examples.

Site Type	Definition
<b>Maritime</b> Fishing	Fixed sites or objects with a direct link to fishing industry e.g. fish traps, fishing stations, bothies, boat houses, icehouses, winches.
<b>Maritime</b> Craft	Craft, ballast mounds, components of crafts such as timbers, boilers, capstans.
<b>Maritime</b> Harbours	Formal harbour structures associated with and serving settlements, e.g., built harbours, piers, jetties, breakwaters, docks.
<b>Maritime</b> Landing Places	Informal and small-scale, landing areas or structures, e.g. cleared slipways, piers, jetties, breakwaters.
<b>Maritime</b> Safety and Navigation	Infrastructure related to navigation e.g. lighthouses, beacons.
<b>Industry</b> Factories and Works	Industry not directly related to fishing, e.g. rope works, brick works, tide mills, lime kilns, salt pans.
<b>Industry</b> Extractive	Extractive industries, e.g. coal mining, quarrying.
<b>Infrastructure &amp; Engineering</b>	Railways, tracks, bridges, embankments, drainage.
<b>Settlement &amp; Agriculture</b> Buildings	Buildings related to settlements and agriculture.
<b>Settlement &amp; Agriculture</b> Boundaries	Boundary stones, fences and walls demarking property or land boundaries.
<b>Landscapes of resource exploitation &amp; repeated human activity</b>	Middens, shell middens, artefact scatters, lithic scatters, burnt stone, buried anthropogenic soils/ ground surfaces
<b>Castles and Forts</b>	Remains of castles and promontory forts.
<b>Religious</b>	Churches, burial sites, holy wells, crosses.
<b>Military</b> WW2	Military sites constructed as part of Second World War coastal defences e.g. pillboxes, observation posts, gun emplacements, anti-tank cubes, anti-glider posts or roadblocks.
<b>Military</b> Other	Military sites which are not solely Second World War, e.g. Napoleonic or WW1 targets and rifle ranges or military bases and airfields.
<b>Natural Features</b>	Geologic or geomorphologic features e.g. sea stacks, mounds, intertidal peat, unmodified caves, unmodified springs.
<b>Miscellaneous</b>	Sites out with the outlined site types.

Table 2. Site type categories and definitions

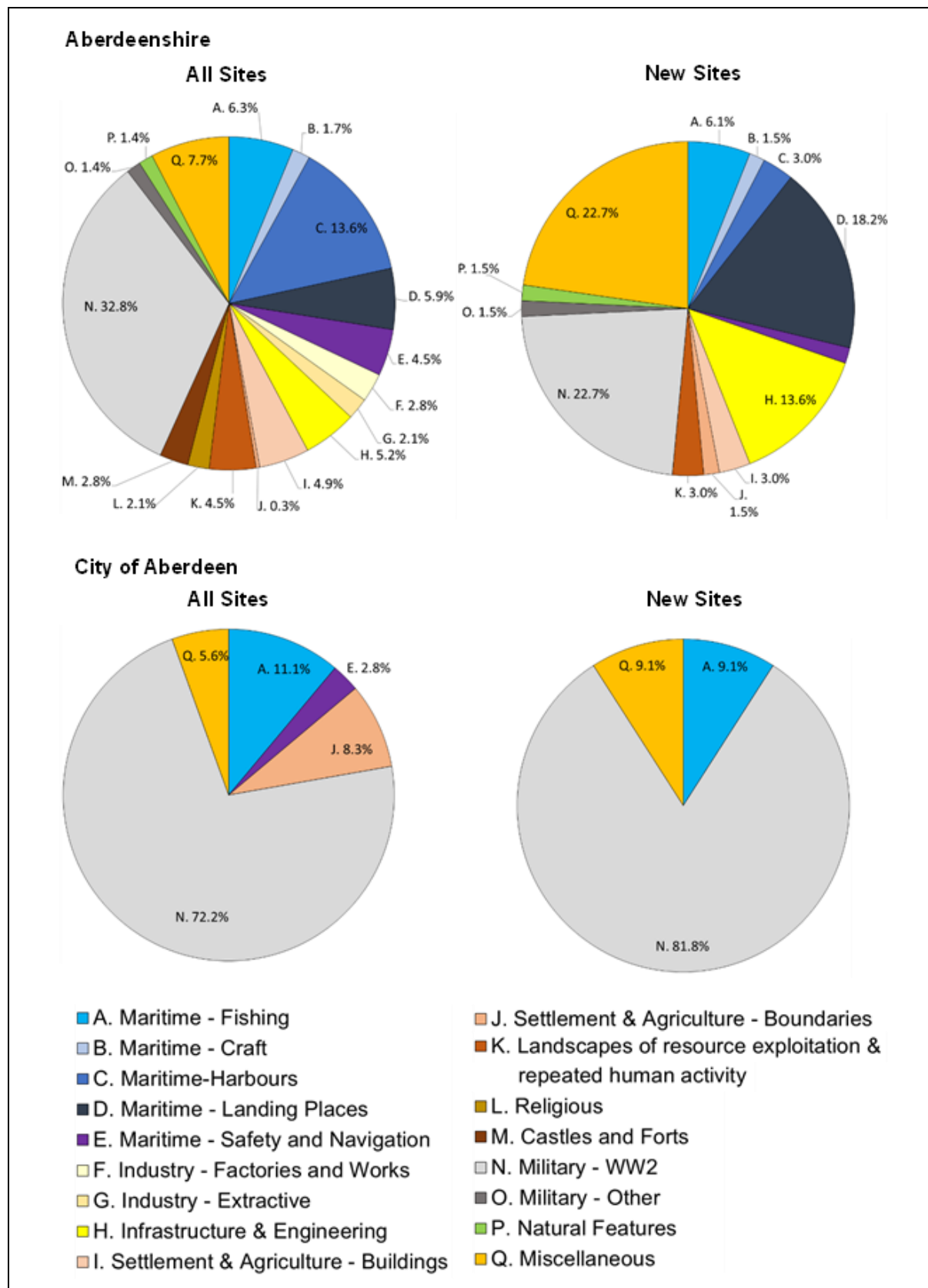


Figure 14. (A) All Aberdeenshire sites updated during survey, arranged by category (n=287); (B) New sites recorded during the Aberdeenshire survey, arranged by category (n=66); (C) All City of Aberdeen sites updated during the survey, arranged by category (n=36); (D) All new City of Aberdeen sites recorded, arranged by category (n=11).

#### 4.2.1. Military

##### *Military – WW2*

Second World War sites related to the coastal anti-invasion defences of Britain make up 33% of site types visited in the Aberdeenshire council area (and over 70% of sites surveyed between the Bridge of Don and Blackdog in the City of Aberdeen council area). The types of WW2 sites include anti-tank cubes (Figure 15A), pill boxes (Figure 15B) and anti-landing defences as well as examples of magazines, observation posts, gun emplacements (Figure 15C) and a radar-station (Figure 15D).



*Figure 15A. Anti-tank cubes, Sandend Bay, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/14724>).*



*Figure 15B. Type 24 pillbox and gun blockhouse, Sandend, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/14784>).*



*Figure 15C. Naval gun emplacement, Foveran Links, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/14931>).*



*Figure 15D. Radar station, Goats Hillock, Cruden Bay, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/15226>).*

A double row of anti-tank cubes survive along the full length of Sandend Bay, and there are significant alignments along the coast from Blackdog to Bridge of Don. Many anti-tank cubes remain in their original position, providing good evidence of the position of the shoreline in 1940, however there are a number of instances where they have been moved and repurposed into an ad-hoc coastal defence, such as along the coast edge at Tangleha' ([SCAPE ID: 14482](#)), at Inverbervie ([SCAPE ID:14633](#)) and to defend part of the golf course at Cruden Bay ([SCAPE ID:15747](#)). At Whitelinks Bay west of Inverallochy tank cubes have been re-used to construct a



small harbour (Figure 16A) and to extend the breakwater at Cairnbulg Westhaven Pier ([SCAPE ID: 14533](https://scapetrust.org/sites-at-risk/site/14533)).

At the northern end of Fraserburgh Bay is a possibly unique reuse of a gun emplacement in a children's playground (Figure 16B).



*Figure 16A. Anti-tank cubes repurposed as a small harbour, Whitelinks Bay, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/14810>)*



*Figure 16B. Gun emplacement repurposed as a playground, Fraserburgh, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/14745>)*

Anti-tank cubes were cast in situ by soldiers stationed in the area between 1940-41. A close look at the cubes can often reveal initials and designs pressed into the wet concrete when they were created. A partially buried cube situated at the mouth of the Cuttie Burn along the Craigewan Links, north of Peterhead, is inscribed with lettering JAMES ALEXANDER 17/10/40 ([SCAPE ID:15702](https://scapetrust.org/sites-at-risk/site/15702)) and the top face of a tank cube at Blackdog Links is inscribed twice with the date '1940' and has a number of shells pressed into the concrete, perhaps representing four leaf



clovers or flowers ([SCAPE ID: 14835](#)). Amongst the anti-tank cubes south of Newburgh along Foveran Links is one of the most elaborately decorated, adorned with sketches of two men, one of which is thought to depict Hitler, the date '1940' and a banner reading 'Hitler's Graveyard'. Centrally placed on the cube face is a heart pierced with an arrow, with the enclosed words 'Louis Lawson BORN 2<sup>nd</sup> 3<sup>rd</sup> 1910'. The cube was mostly buried during our survey but has been described by Barclay (2013) and photographed by Jim Lister in March 2021 (Figure 17).



Figure 17. Decorated anti-tank block, Newburgh, Aberdeenshire (Photo: Jim Lister).

In the dunes at Foveran Links are a collection of military remains including an unusual concrete gun emplacement (Figure 15C, [SCAPE ID:14931](#)), a red brick pillbox, which is a Balmedie variant design ([SCAPE ID:15743](#)) and the remains of intact sections of metal scaffolding anti-landing defences (Figure 18A). Nearby, a scatter of metal scaffold fittings may represent a construction or dismantling area, or a pile of unused fittings (Figure 18B).





Figure 18A. Remains of metal scaffolding military defences and Type 24 redbrick pillbox, Foveran Links, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/14579>).



Figure 18B. Metal scaffold fittings scattered across the sand blow out, Foveran Links, Aberdeenshire.

Several groups of short wooden stakes and metal poles visible at low tide between Blackdog and Balmedie are most likely the remains of anti-landing defences (Figure 19). These remains are more poorly preserved along the long open coasts of the eastern Aberdeenshire coastline than similar defences in more sheltered areas of the Moray Firth. It is also difficult to distinguish between anti-landing posts and the remains of fixed salmon fishing stake nets in some instances.



Figure 19. Example of wooden post remains which are found in a number of locations along the coast at Balmedie, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/15656/>). Photo Adam Coldwells.

On a small promontory between Port Keppies and Poor Man of Broad Haven, Whinnyfold, is an interesting new site which has been tentatively interpreted as the remains of a military observation post ([SCAPE ID:15715](#), Figure 20). The site consists of a low rectangular turf

enclosure 20m x 11m and a ~3m diameter foxhole dug into the northwest corner. In addition there are the remains of a concrete and brick septic tank and a slightly raised concrete platform, 5m diameter, shallowly buried beneath the grass. The stumps of two parallel rows of metal poles set in concrete bases running across the promontory are perhaps the remains of a walkway. From this location there are clear uninterrupted views to Slains Castle, northwards and Aberdeen to the south which may suggest it is a lookout post, however, further research is needed for this site.



Figure 20. Military observation post site at Port Keppies, Whinnyfold, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/15715>).

#### Military – Other

A small number of non-WW2 sites were updated: a magazine at Scotstown, Banff Links ([SCAPE ID:14674](#)) and two records of Batteries at Johnshaven ([SCAPE ID:14700](#) and [SCAPE ID:15799](#)). The site of a coastal battery at Inverbervie was the only new non-WW2 site encountered in the areas walked ([SCAPE ID: 15792](#)).

#### 4.2.2. Maritime

The built heritage remains of Aberdeenshire's rich maritime history account for 32% of sites updated and newly documented in the sections walked in the survey.

##### Maritime – Fishing

Fishing related sites encompassed a variety of site types including fish smoking kilns at Sandend, ice-houses at Inverbervie ([SCAPE ID: 14956](#)) and Seagreens ([SCAPE ID: 15256](#)); and numerous winches, usually associated with harbours, landing places or fishing stations. (See also *Maritime – Landing places*). Only one certain example of the remains of a fixed net for salmon fishing was



recorded at Holy Shore, Newburgh (Figure 21), although a few of the anti-landing posts may actually be remains of salmon stake nets.

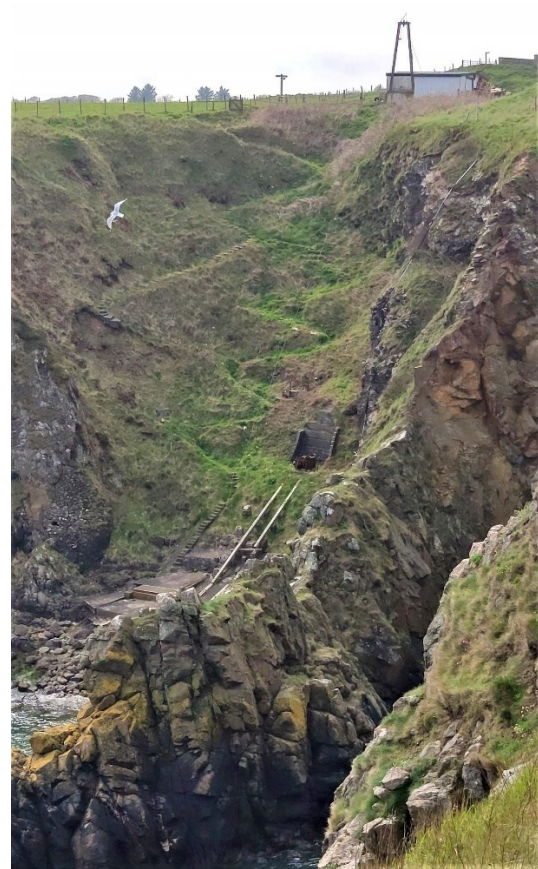


Figure 21. Remains of salmon fishing stakes, Holy Shore, Newburgh (<https://scapetrust.org/sites-at-risk/site/15741>) with unrelated wreck of 20<sup>th</sup> century wooden fishing vessel in the background (<https://scapetrust.org/sites-at-risk/site/15742/>).

There is abundant evidence of historic fisheries in onshore infrastructure in villages (highlights included in *Maritime – Landing places*) and fishing stations around the Aberdeenshire coast. Along the rocky coastline between Aberdeen and Stonehaven, they are found in tiny coves, often at the bottom of steep cliffs. Good examples of salmon fishing stations were recorded at Portlethen (Figure 22A); Altens Haven ([SCAPE ID:15161](#)); Burnbanks Haven (Figure 22B); Cove Harbour ([SCAPE ID: 15067](#)), Downies ([SCAPE ID: 15307](#)), and Newtonhill/Skateraw ([SCAPE ID: 14719](#)). On the cliff top above Altens Haven and Burnbanks, are rare survivals of cableways which lifted nets, other heavy gear, and fish from the shore to the top of the steep cliffs. We learned from residents that these were known locally as ‘Blondins’, named after the famous 19<sup>th</sup> century French tightrope walker Charles Blondin, who walked on a high wire over Niagara Falls. Blondin apparatus was the term used for iron and steel ropeways introduced into quarries in the late 19<sup>th</sup> century. Most of these tiny bays have a long history as fishing ports utilising the natural coves. In 1845 the New Statistical Account reported that together Portlethen, Downies, and Findon had 18 boats primarily engaged in white fishing. As the century progressed the salmon fisheries became increasingly important and the natural coves were developed into small salmon harbours with cableways, sheds for gear, winches, and railed slipways. Salmon fishing stations declined from the mid-20<sup>th</sup> century and had mostly ceased operation by the 1980s.



*Figure 22A. Portlethan, winch sheds, wooden rails, Blondin apparatus and net shed on the cliff top. Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/14718>).*



*Figure 22B. Burnbanks Haven, rails, winches and Blondin apparatus. City of Aberdeen (<https://scapetrust.org/sites-at-risk/site/15804>).*

Fishing bothies, icehouses and flag staffs connected to fishing stations are present around the Aberdeenshire coast. At Milton of Mathers, the remains of salmon bothies are perilously close to the eroding coast edge (Figure 23). We were informed that these belonged to Johnsons of Montrose Salmon Company until the 1980s. The buildings were also used as welfare facilities for soldiers who were manning the coastal defences in the area during WW2.





Figure 23. Eroding remains of salmon bothies, Milton of Mathers, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/15689>)

#### Maritime – Craft

The survey updated two existing shipwreck records in the Rattray Head area and an existing shipwreck record at St Combs. The striking remains of a large wooden vessel, wrecked ~1.5km south of Rattray Head lighthouse are thought to be the remains of the *Excelsior*, a Norwegian barque which was wrecked on the 22<sup>nd</sup> November 1881. At the time of survey, the visible remains measured 40m in length and 8.5m in width, with the ends of 60 wooden frame visible on the south side, varying in heights up to ~1m above the sand surface. The stem post as well as some of the frame timbers had been sawn (Figure 24A). Approximately 750m south of Rattray Head Lighthouse the remains of a single corroded metal post was recorded ([SCAPE ID: 15697](#)). This is the location of the stranding of HMS *Erne*, an early 20th century Destroyer, which was wrecked in 1915 (Canmore 290584). There is a good account of the salvage plans for HMS *Erne* on the [Lost in Waters Deep](#) website. The vessel was sold to the Forth Shipbuilding Co Ltd for £405 in 1915, but at least some of the ship remained as a wreck. The metal post/pipe was the only visible element in October 2022, the rest buried beneath the sand.

The metal wreck recorded at St Combs (Figure 24B) could be the remains of the SS *Anna*, a steel cargo ship which ran aground near St Combs on 7<sup>th</sup> December 1959 during a storm (Wrecksite, 2023) although it could also relate to HER record NK06SE011 which describes a wreck which is thought to have been wrecked during WW2.



Figure 24A. Wooden remains of the *Excelsior*, Rattray Head, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/15688>).



Figure 24B. Metal remains thought to be the remains of the *SS Anna*, St Combs, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/15679>).

A new craft site recorded during the survey was that of the partial remains of a small wooden vessel, lying upside down on the beach at Holy Shore, Newburgh, Aberdeenshire (Figure 21 and [SCAPE ID: 15743](#)). The boat is carvel built with iron fittings and local information suggests that it is a post war fishing vessel.

#### *Maritime – Harbours*

The Aberdeenshire coastline is home to numerous harbours, ranging from the large ports at Fraserburgh, Peterhead and Aberdeen, to small harbours serving local communities, such as the modified natural harbour at Milton Ness (Figure 25). Except for photographs, working harbours were not recorded in detail during our survey.



Figure 25. Modified rock cut natural harbour, concrete slipway in foreground, Milton Ness, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/14604>).



### Maritime – Landing places

Five existing records of landing places were updated during the CCZAS and a further twelve new sites added to the record. The majority of the records relate to cleared slipways associated with fishing, such as those recorded at Whinnyfold, Pittentander (SCAPE ID: [15708](#) and [15709](#)), with other sites including a small jetty (and possible fish trap) at Waterside Wood, Sands of Forvie (SCAPE ID: [14688](#)), a concrete jetty at Pennan Mill Shore (Figure 26) and a quay at Cullykhan Shore (Figure 27).



Figure 26. 20<sup>th</sup> century jetty at Pennan Mill Shore, Aberdeenshire, probably related to a salmon fishery (<https://scapetrust.org/sites-at-risk/site/14532>).

The Old Quay at Cullykhan Shore appears on an 18<sup>th</sup> century estate map (Greig *et al.* 2012). It could be related to the remains of a castle on the cliffs above. If so, there is a possibility that the landing place may be medieval or early modern in date.



Figure 27. Old quay made of sandstone blocks situated at base of cliffs at north of Cullykhan Shore (<https://scapetrust.org/sites-at-risk/site/14484>).



There are a notable group of cleared slipways along a circa 1km stretch of the rocky foreshore of Inverallochy. We recorded four associated with winches: Scrath Craig ([SCAPE ID: 15671](#)); West Lake ([SCAPE ID: 15672](#)); Gowan Hole ([SCAPE ID: 15673](#)); and Boat Hive ([SCAPE ID: 15675 and 15676](#)). A former net drying yard (still in use as a drying green) is located adjacent to a cleared slipway, known as the Washing Hive ([SCAPE ID: 15677](#)). Together these sites tell the story of Inverallochy's fishing heritage.



*Figure 28. Boat winch, mooring ring and naust on the south side of Inverallochy Boat Hive, Aberdeenshire. The winch is stamped with manufacturer "Tangyes Birmingham" (<https://scapetrust.org/sites-at-risk/site/15676>).*

#### *Maritime – Safety and Navigation*

At Cairnbulg Point, Inverallochy, a Rocket Apparatus and Life Saving Apparatus House (later a Coastguard lookout) are depicted on the 2<sup>nd</sup> edition Ordnance Survey. The rocket apparatus was developed in the early 19th century by Henry Trengrouse. A rocket carrying a thin line was fired to a ship in distress, and then used to set up a zip line and harness (breeches buoy) from ship to shore to rescue the crew. This life-saving equipment was installed at several fishing villages in the area in 1826 and regular training in its use carried out. What remains of the rocket apparatus at Cairnbulg is part of the rocket pole, locally known as the monkey pole, which is now located beside a memorial (Figure 29A) and the remains of a tripod leg and securing pin for the zip line (Figure 29B). The pole represented the mast of a ship during training sessions. During training a volunteer from the Rocket Brigade would climb the pole and catch the rope which enabled the breeches buoy to be set up between ship and shore (Figure 29 C and D). The apparatus could be taken to the scene of a wreck on a hand cart, which was kept at the Apparatus House. The rocket apparatus was last used at Cairnbulg in 1985 Brown (2014). We know of no other surviving *in situ* remains of rocket apparatus in Scotland.



Figure 29. Remains of rocket apparatus, Inverallochy, Aberdeenshire. A. Rocket pole; B. Remains of tripod leg and securing peg. (<https://scapetrust.org/sites-at-risk/site/15670>).

C and D rocket pole and tripod in use in practise in Happisburgh, Norfolk during WW2.

(<https://happisburgh.org.uk/history/sea/life-saving-apparatus/> )

#### 4.3.3. Industry

There is a significant historic quarrying landscape along the hard cliff coast at Boddam south of Peterhead. Former quarry pits, buildings, spoil tips and the remains of the embankment of a mineral railway are all still visible. These date from the end of the 19<sup>th</sup> century. The Stirling Hill quarry at Boddam, further inland on the west side of the A 90, is still active.





Figure 30A. Disused quarry pit at Boddam, Stirling Hill. The presently active quarry is just visible in the background (<https://scapetrust.org/sites-at-risk/site/14605/>)



Figure 30B Possible gunpowder store at Boddam, Stirling Hill (<https://scapetrust.org/sites-at-risk/site/15231/>)

Between Sandend and Redhaven there are the remains of an historic coastal industrial landscape comprising former quarrying, limekilns, and buildings. We noted a possible new site of a limekiln eroding from the coast edge in addition to the two previously recorded at Sandend ([SCAPE ID:15667](https://scapetrust.org/sites-at-risk/site/15667/)). A ruinous building is probably related to either quarrying or lime burning ([SCAPE ID: 14698](https://scapetrust.org/sites-at-risk/site/14698/)).



Figure 31A. Possible site of eroding limekiln, Sandend (<https://scapetrust.org/sites-at-risk/site/15667/>)



Figure 31B. Ruinous building in area of lime kilns and quarry, Sandend. (<https://scapetrust.org/sites-at-risk/site/14698/>)

At Red Haven are the remains of a building and enclosure, depicted on the 1<sup>st</sup> Edition Ordnance Survey which are teetering on the edge of an actively eroding coast (Figure 32). The building is probably related to the nearby quarry.





Figure 32. Eroding building and enclosure, probably associated with the quarry, Red Haven, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/14925>).

A succession of 18<sup>th</sup> century and later limekilns comprising a single and a pair of kilns and a three-draw kiln were recorded at East Mathers near Johnshaven (Figure 33). During WW2 one of the kilns was converted to an observation post for the Home Guard.



Figure 33. A pair of limekilns, and a three-draw limekiln, East Mathers, Aberdeenshire (<https://scapetrust.org/sites-at-risk/site/14473>).

#### 4.3.4. Infrastructure & Engineering

A pumping station was built in Perthudden Bay *circa* 1890 to provide fresh water to Collieston. A series of pumps lifted water from an underground stream to a header reservoir at the cliff top from where it was piped to the village. Evidence of these pumps consist of concrete cisterns ([SCAPE ID: 15724](#); [SCAPE ID: 15736](#)) and slight earthwork remains of the pumping station built on the site of a former boathouse ([SCAPE ID: 15725](#)). Information and photographs about this interesting site can be found on the SCRAN website (Collieston's Century, 2023a,b). Very little now remains in Perthudden Bay of this infrastructure which would have been of high importance to the people of Collieston in its time of operation.

Other notable infrastructural remains encountered in the survey relate to the northern section of the Montrose and Bervie railway line - the Bervie Branch - opened in 1865, which terminated at Inverbervie. The line was closed to passengers in 1951. The railway embankment is visible running parallel to the coast edge between Johnshaven and Gourdon. North of Gourdon, the line of the railway line has been re-purposed as the coastal path and several original features relating to the railway survive. These include the remains of the turntable at the Inverbervie

terminus ([SCAPE ID: 1587](#)) and stone revetments, fences, boundary walls and building footings, ([SCAPE ID: 15794](#); [SCAPE ID 15792](#)).

#### 4.3.5. Landscapes of resource exploitation and repeated human activity

The sand dune systems of the Sands of Forvie reveal a rich history of prehistoric occupation. Blowouts within the dunes reveal old land surfaces containing extensive flint scatters. We observed abundant flint knapping debitage on previously recorded lithic scatter sites ([SCAPE ID: 14477](#); Figure 34F). Further inland, situated on the stable, vegetated dunes are hut circles, kerb cairns and a ring cairn. Three shell middens have been recorded in Forvie. These middens were excavated between 2010 and 2014 by Aberdeen University and dated to the 3<sup>rd</sup>-10<sup>th</sup> century AD (Noble *et al.*, 2016). One of the three middens, referred to as Midden C in the 2016 study, is situated on the coast edge and is actively eroding ([SCAPE ID: 15374](#)).

Two new sites were recorded during the October 2022 survey. The first of these is a dispersed lithic scatter ([SCAPE ID: 15731](#)) along the foreshore in front of eroding Midden C (Figure 34A-D). The second is a shell midden ([SCAPE ID: 15735](#)). The new shell midden was discovered within the sand dunes towards the southern tip of the Forvie Nature Reserve approximately 1km south of the previously recorded shell middens. The midden mound covers at least 10m x20m and contains burnt and fragmented mussel, charcoal, and fire cracked stones, revealed in the upcast from rabbit burrows across the mound. At this site a fragment of a rotary quern was also identified (Figure 34E). The composition and character of the mound looks similar to the shell middens previously excavated.



Figure 34 A-D, Examples from dispersed flint scatter along north shore of the river Ythan in area of shell middens. 34E, Rotary quern fragment found at new shell midden site. 34F, flint working area.



#### 4.3.6. Castles and Forts

Castles, forts, and other coastal strongholds of all periods are under-represented in the CCZAS records because they are mostly situated on hard geology high cliff coasts. Many will be at risk of structural instability and periodic collapse of the cliffs upon which they stand. Two examples recorded in our survey are Slains Castle and Boddam Castle (Figure 35). Sections of the largely 19<sup>th</sup> century fabric of (new) Slains Castle are structurally unstable and built on the cliff edge. The surviving masonry of 16<sup>th</sup> century Boddam Castle is in a precarious structural condition. Remains of the curtain wall on the south side of the promontory is starting to collapse.



Figure 35A. Southeast section of Slains Castle at cliff edge (<https://scapetrust.org/sites-at-risk/site/14753/>).

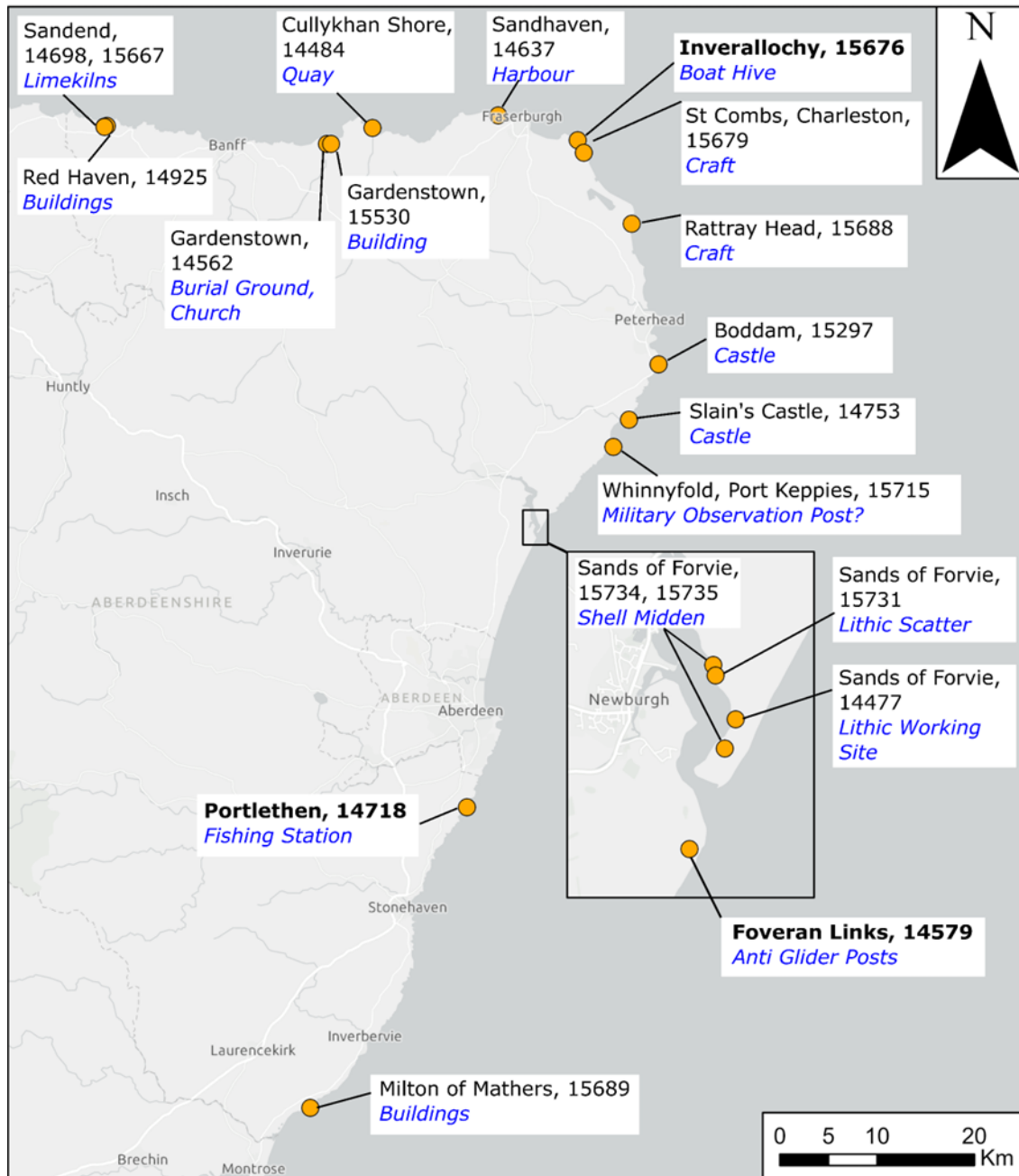


Figure 35B. South curtain wall of Boddam Castle on edge of gully (<https://scapetrust.org/sites-at-risk/site/15297/>).



## 5. Priority sites and recommendations

Twenty sites have been assigned a priority 3 status based upon their vulnerability to coastal erosion and potential archaeological significance. Fourteen of these have existing Canmore or HER records associated with them. Six, are new sites (Table 3). It is recommended that all are regularly monitored at three-to-five-year intervals or following extreme weather events.



Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS

Figure 36. Twenty priority 3 sites

Of these twenty, 3 records have been designated master records. We have used master records to bring together geographically close collections of individual sites or features that together comprise a significant heritage grouping. These are:

- Portlethen fishing station ([SCAPE ID:14718](#)) which includes the small fishing stations located along the rocky coast between Aberdeen and Stonehaven: Newtonhill/Skateraw (SCAPE ID: 14719); Cove Harbour (SCAPE ID: 15067); Downies (SCAPE ID: 15307); Burnbanks Haven (SCAPE ID: 15804) and Altens (SCAPE ID: 15161).
- Inverallochy, Boat Hive ([SCAPE ID:15676](#)) which includes landing places and winches on the Inverallochy shore (SCAPE IDs: 15675, 15677, 15673, 15672 and 15671).
- Foveran Links ([SCAPE ID: 14579](#)) includes the pillbox (SCAPE ID: 15743) and concrete gun emplacement (SCAPE ID: 14931).

We have highlighted fishing stations between Aberdeen and Stonehaven because they form a distinctive group of sites which collectively contain the physical remains of the many elements common to 19<sup>th</sup> and 20<sup>th</sup> century fishing stations. A handful of people still fish from some of them, but they are largely disused and many of the structural elements and equipment are in a state of disrepair. This includes slipways, rails, winches, and winch houses as well as the boats themselves. Rare survivals of the ‘Blondins’ at Portlethan and Burnbanks elevates the significance of these sites as important places of modern fishing heritage.

Closely related are the collection of winches, cleared slipways, havens and net drying greens at Inverallochy. There are countless examples of all of these around Scotland’s coast, but the concentration at Inverallochy and the association with placenames and with the fishing village itself makes this a good example.

Selected conservation and interpretation of some of these sites would enhance the cultural heritage and social history information for the Aberdeenshire Coastal Trail.

The final master record represents intact sections of anti-landing scaffolding associated with a brick Balmedie variant pillbox, double gun emplacement and a line of anti-tank cubes including the elaborately decorated ‘Hitler’s Graveyard’ example. This group is highlighted because of the extremely rare survival of the scaffolding and the uncommon forms of the pillbox, gun emplacements and decorated cubes. Except for the anti-tank cubes which were largely buried during our survey, the other elements were unusually fully exposed in the mobile sand dunes of Foveran Links. As well as general structural decay, the scaffolding and perhaps the decorated cube may be at risk from souvenir hunters.

A possible WW2 observation post at Whinnyfold has been assigned a priority 3 status, partly because the function and therefore the significance of the site is unknown. A full survey and further historical research would be very useful.

The castles, buildings, limekilns and Sandhaven Harbour are all structurally unstable, as well as being located at the coast edge or intertidal zone. Regular monitoring of their condition is recommended for management and safety reasons. Boddam Castle is in a populated area and has potential for high amenity value with improved site management and safe public access.

The Sands of Forvie is a well-managed National Nature Reserve containing an important group of heritage assets from all periods. The shifting sands and erosion at the mouth of the river Ythan both reveal and obscure archaeological material. At risk are lithic scatters and shell middens on the mobile sand dunes on the southern tip of the reserve. Management of these fragile archaeological remains would benefit from regular monitoring, perhaps as part of the volunteer warden programme on the reserve. Where lithic scatters and archaeological remains are exposed, visitors should be encouraged to avoid walking over them.

A summary of vulnerability and recommended action for each site is given below.

Scape ID	Canmore ID	HER ID	Site Name	Site Type	Summary of vulnerability	Recommended Action
<i>Maritime - Fishing</i>						
14718	37207	NO99NW0204	Portlethen, Fishing Station	Fishing Station	Coast edge, Intertidal. Structural decay.	Monitor. Consider management and conservation options for selected sites in this group.
15689	-	-	Milton of Mathers	Buildings	Coast edge. Structural instability.	Monitor.
<i>Maritime – Craft</i>						
15679	-	NK06SE0011	St Combs, Charleston	Craft	Intertidal. Decay.	Monitor
15688	257495	NK15SW0091	Rattray Head	Craft	Intertidal Decay.	Monitor
<i>Maritime – Harbours</i>						
14637	120168	NJ96NE0020	Sandhaven, harbour	Defence Obstruction(s), Harbour	Intertidal. Structural instability	Monitor.
<i>Maritime – Landing Places</i>						
14484	123976	NJ86NW0016	Cullykhan Shore Old Quay	Quay	Intertidal.	Monitor. Historical research to refine dating.
15676	-	-	Inverallochy, Boat Hive	Naust, Winch, Mooring ring	Coast edge, intertidal. Structural decay.	Monitor. Consider management and conservation options for selected sites in this group.
<i>Industry - Factories and Works</i>						
14698	290436	NJ56NE0317	Sandend Bay	Building, Lime Kiln	Coast edge. Structural instability.	Monitor.



Scape ID	Canmore ID	HER ID	Site Name	Site Type	Summary of vulnerability	Recommended Action
15667	290436	NJ56NE0317	Sandend	Lime kiln?	Coast edge. Erosion.	Monitor for further erosion and more structure revealed
<i>Settlement &amp; Agriculture - Buildings</i>						
14925	350364	NJ56NE0051	Red Haven	Buildings	Coast edge. Structural instability.	Monitor
15530	-	-	Gardenstown	Building	Coast edge. Erosion.	Monitor
<i>Landscapes of resource exploitation &amp; repeated human activity</i>						
14477	87194	NK02NW0032	Sands of Forvie	Lithic Working Site	Dunes, Aeolian	Monitor.
15731	-	-	Sands of Forvie	Lithic Scatter	Foreshore/ intertidal.	Regular walk along foreshore to note further material.
15734	165124	NK02NW0046	Sands of Forvie	Shell Midden	Coast edge. Slope instability.	Monitor.
15735	-	-	Sands of Forvie	Shell Midden	Dunes, Aeolian	Monitor.
<i>Religious</i>						
14562	19282	NJ76SE0002	Gardenstown, St John's Church	Burial Ground, Church	Cliff edge, landslip.	Monitor cliff.
<i>Castles and Forts</i>						
14753	21149	NK13NW0001	Slains Castle	Castle, Country House	Cliff edge. Structural instability.	Monitor for safety.
15297	21292	NK14SW0002	Boddam Castle	Castle	Cliff edge. Structural instability.	Monitor. Consider conservation and interpretation options.
<i>Military - WW2</i>						
<b>14579</b>	88830	NK02SW0005	Foveran Links	Anti Glider Posts	Dune. Aeolian. Structural decay.	Monitor.
15715	-	-	Whinnyfold, Port Keppies	Military Observation Site?	Cliff edge.	Monitor. Survey and historical research.

Table 3. Summary of priority sites. Master records in bold.

## 6. Acknowledgements

Special thanks to all our volunteers who made the surveys so enjoyable and informative. We thank Sands of Forvie volunteer wardens and seasonal wardens for sharing their very considerable knowledge about the reserve and the local area which made our visits immensely productive. Volunteers from Mesolithic Deeside made great discoveries at the Sands of Forvie. Thank you to Johnshaven Heritage Centre for information about Johnshaven and the local area. On several occasions, we learnt a great deal from residents who were interested in what we were up to and kind enough to share local information with us.

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## Appendix 1. Known sites visited on 2022 survey - Aberdeenshire

SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
<i>Maritime - Fishing</i>							
14471	Sandend, Fish smoking kiln abutting 1C Sandend	Kiln	Post-Medieval	355476	866583	230156	NJ56NE0316
14513	10 Pennan, Shed	Gear Store	Post-Medieval	384638	865491	229749	NJ86NW0086
14519	Sandend, Fish smoking kiln opposite 1B Sandend	Kiln	Post-Medieval	355487	866577	230151	NJ56NE0156
14570	Sandend, Fish smoking kiln opposite 1A Sandend	Kiln	Post-Medieval	355492	866569	230149	NJ56NE0161
14669	Port Erroll, Salmon Fishery	Barking Pot, Fishing Station	Post-Medieval	409332	835808	20908	NK03NE0035
14714	Port Erroll, Harbour Street, Icehouse	Icehouse	Post-Medieval	409334	835827	20899	NK03NE0163
14718	Portlethen, Fishing Station	Fishing Station	Post-Medieval	393501	796264	37207	NO99NW0204
14719	Newtonhill, Harbour	Harbour	Post-Medieval	391380	793520	37219	NO99SW0004
14789	Forvie Church	Building	Post-Medieval,	402075	826430	350333	NK02NW0183
14824	Pennan	Icehouse	Post-Medieval	384360	865520	272994	NJ86NW0036
14956	Inverbervie	Ice-Houses	Post-Medieval	383389	772449	-	NO87SW0084
15256	Seagreens	Chambers, Ice-Houses	Post-Medieval	377934	765973	36319	NO76NE0012
15307	Downies, Harbour	Harbour	Post-Medieval	392700	795000	122254	NO99SW0005
15769	Ugie Mouth, Peterhead	Peterhead, Buchanhaven, Golf Road, The Fish House	Post-Medieval	412235	847327	77146	NK14NW0024
15791	Inverbervie	Winch	Modern	383273	772169	-	NO87SW0247
<i>Maritime - Craft</i>							

SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
14743	Couts Rocks, Benholm	Craft (Wood)	Period Unknown	382180	769610	358764	NO86NW0013
15679	St Combs, Charleston	Craft	Modern	405516	863551	-	NK06SE0011
15688	Rattray Head	Craft	Post-Medieval	410440	856256	257495	NK15SW0091
15697	Rattray Head	Destroyer	Modern	410679	857126	290584	-
<i>Maritime - Harbours</i>							
14494	Johnshaven Harbour, north-east pier	Pier	Post-Medieval	379587	766932	280101	-
14506	Whitehills, 4 Harbour Place	Storehouse	Post-Medieval	365556	865637	316379	NJ66NE0107
14508	Whitehills, West End	Storehouse	Post-Medieval	365438	865490	316680	NJ66NE0106
14520	Boddam Harbour	Harbour	Post-Medieval	413457	842714	21338	NK14SW0011
14533	Cairnbulg, west haven pier	Pier	Modern	403420	865680	124031	NK06NW0011
14560	Whitehills Harbour	Harbour	Post-Medieval	365561	865712	18434	NJ66SE0045
14569	Peterhead, Buchanaven Pier	Pier	Post-Medieval	412830	847310	21223	-
14573	Johnshaven Harbour	Harbour	Post-Medieval	379538	766950	36320	NO76NE0009
14582	Sandhaven, Main Street, Forbes' Boatyard	Boat Yard	Modern	396490	867430	95766	-
14592	Johnshaven Harbour, Slipway	Slipway	Post-Medieval	379594	766983	280103	-
14604	Milton Ness, Haven	Harbour	Post-Medieval	377150	764990	150167	-
14637	Sandhaven, harbour	Defence Obstruction(s), Harbour	Post-Medieval	396700	867400	120168	NJ96NE0020
14644	Whitehills, Harbour Place, Market	Market	Post-Medieval	365624	865702	280405	NJ66NE0110
14668	Port Erroll, Harbour	Harbour	Post-Medieval	409410	835640	20907	NK03NE0036
14690	Knock Head, Harbour	Harbour	Post-Medieval	365960	865880	133063	NJ66SE0043



SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
14691	Gardenstown, Harbour, North Sea	Harbour	Post-Medieval	379930	864830	133367	NJ76SE0013
14696	Portsoy, Shore Street, New Harbour	Harbour	Post-Medieval	359033	866455	158842	-
14706	Portsoy, Shorehead, Old Harbour	Harbour	Post-Medieval	358894	866347	17932	NJ56NE0010
14713	Collieston Harbour	Harbour	Post-Medieval	404060	828540	20846	NK02NW0017
14733	Johnshaven Harbour, central pier	Pier	Post-Medieval	379545	766955	280100	-
14737	Portsoy, Shore Street, New Harbour, Slipway	Slipway	Post-Medieval	359092	866444	282148	-
14755	Sandend, Harbour, Breakwater	Breakwater	Post-Medieval	355587	866532	230383	-
14758	Stonehaven, Old Pier, Old Tolbooth	Tolbooth	Post-Medieval	387804	785521	36899	NO88NE0018
14772	Johnshaven Harbour, south-west pier	Pier	Post-Medieval	379566	766937	280099	-
14820	Sandend, Harbour	Harbour	Post-Medieval	355548	866540	115273	NJ56NE0041
14821	Pennan, Harbour	Harbour	Post-Medieval, Modern	384671	865584	120488	NJ86NW0006
14822	Crovie, Pier	Pier	Post-Medieval	380721	865534	123982	NJ86NW0008
14525	Stonehaven Harbour	Harbour	Post-Medieval	387764	785415	36938	NO88NE0029
14541	Gourdon Harbour, East Slipway	Slipway	Post-Medieval	382678	770764	280092	-
14542	Stonehaven Harbour, Inner Dock	Dock	Post-Medieval	387749	785352	280113	-
14543	Stonehaven Harbour, The Breakwater	Breakwater	Post-Medieval	387938	785403	280117	-
14642	Stonehaven Harbour, Old Pier	Pier	Post-Medieval	387807	785434	280116	-

SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
14680	Gourdon Harbour	Harbour	Post Medieval	382570	770620	36876	NO87SW0033
14693	Stonehaven Harbour, South Pier	Pier	Post-Medieval	387773	785404	280114	-
14732	Gourdon Harbour, West Pier	Pier	Post Medieval	382601	770580	280079	-
14771	Gourdon Harbour, Breakwater	Breakwater	Post-Medieval	382637	770556	280081	-
14827	Gourdon Harbour, West Slipway	Slipway	Post-Medieval	382617	770732	280086	-
<i>Maritime – Landing Places</i>							
14484	Cullykhan Shore Old Quay	Quay	Period Unknown	383790	866130	123976	NJ86NW0016
14532	Pennan, Mill Shore, Pier	Pier	Post-Medieval	384090	865810	123974	NJ86NW0015
14688	Waterside Wood	Fish Trap, Jetty	Post-Medieval	400275	828174	252240	NK02NW0181
15708	Whinnyfold, Pittentander	Cleared slipway, winches	Modern	408227	833185	120091	NK03SE0007
15709	Whinnyfold, Pittentander	Cleared slipway, winch	Modern	408254	833182	120091	NK03SE0007
<i>Maritime – Safety and Navigation</i>							
14479	Rattray Head Lighthouse	Lighthouse	Post-Medieval	411064	857807	107258	NK15NW0001
14489	Cairnbulg, Old coastguard station	Coastguard Station	Post-Medieval, Modern	403700	865556	133171	NK06NW0006
14495	Stonehaven Harbour, Leading Lights	Beacon	Post-Medieval, Modern	387699	785430	280120	NO88NE0423
14550	Portsoy, Shore Street, Lighthouse	Beacon	Post-Medieval	358980	866370	158844	NJ56NE0314
14593	Stonehaven Harbour, The Breakwater, Pilot Beacon	Beacon	Post-Medieval	387943	785407	280121	NO88NE0430
14638	Boddam, Buchan Ness Lighthouse	Lighthouse	Post-Medieval	413624	842263	120265	NK14SW0010
14643	Stonehaven Harbour, South Pier, Pilot Beacon	Beacon	Modern	387812	785397	280119	NO88NE0429

SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
14650	Portsoy, Shorehead, Old Harbour, Lighthouse	Beacon	Post-Medieval	358940	866330	282149	NJ56NE0046
14701	Cairnbulg Briggs, Beacon	Beacon	Post-Medieval	403600	866100	181531	NK06NW0159
14773	Johnshaven Harbour, inner leading light	Beacon	Modern	379524	766983	280104	NO76NE0155
14785	Whitehills Harbour, Lifeboat Station	Lifeboat Station	Modern	365589	865674	169664	NJ66NE0085
14798	Whitehills Harbour, Lighthouse	Beacon	Post-Medieval	365470	865730	18435	NJ66NE0105
14826	Gourdon Harbour, Lower Leading Light	Beacon	Post-Medieval	382640	770740	280082	-
<i>Industry - Factories and Works</i>							
14473	East Mathers, Limekilns	Enclosure, Lime Kiln(s)	Post-Medieval	378220	766280	36318	NO76NE0011
14502	Whitehills, The Knock, Limekiln and store	Lime Kiln, Storehouse	Post-Medieval	365950	865830	158799	NJ66SE0046
14617	Blackpots, Brick and Tile Works	Brickworks, Tile Works	Post-Medieval	366037	865776	18433	NJ66SE0034
14676	Milton Ness, Limekiln	Lime Kiln	Post-Medieval	377022	765108	36317	NO76NE0013
14698	Sandend Bay	Building, Lime Kiln	Post-Medieval	356231	866252	290436	NJ56NE0317
14788	Gardenstown, Craigen's Brick Store	Brick and Tilemaking Site	Post-Medieval	379910	864770	177749	NJ76SE0125
14917	Johnshaven Weaving Factory	Buildings, Factories	Post-Medieval	379221	766733	-	NO76NE0076
15667	Sandend	Lime kiln?	Post-Medieval	356219	866238	290436	NJ56NE0317
<i>Industry - Extractive</i>							
14480	Waterside	Sand and Gravel Workings	Modern	400520	826600	247320	-
14605	Boddam, Stirling Hill	Quarry	Post-Medieval	413082	841540	305266	-



SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
14786	Boddam, Stirling Hill	Spoil Heap, Tramway	Post-Medieval, Modern	412881	841122	305273	-
14787	Boddam, Stirling Hill	Spoil Heap, Tramway	Post-Medieval, Modern	412814	841079	305278	-
14889	Mudlins Den	Quarries	Post-Medieval	383184	771913	-	NO87SW0102
15231	Boddam	Buildings, Enclosures, Quarries	Post-Medieval	413071	841645	143823	NK14SW0039
<i>Infrastructure &amp; Engineering</i>							
14615	Fraserburgh, Kessock Road	Anti-tank Blocks	Modern	400050	866000	194379	-
14625	Cruden Bay, Ladies' Bridge	Footbridge	Modern	409250	836060	20912	NK03NE0031
14739	Gardenstown, Newbank, Sea Wall	Sea Defences	Period Unknown	379790	864640	177978	-
14834	Peterhead, Birnie Bridge	Footbridge	Modern	412050	847400	165077	NK14NW0395
14760	Stonehaven, Shorehead, Duthie's Well	Well	Post-Medieval	387740	785508	80426	NO88NE0309
15787	Inverbervie	Railway Turntable	Post-Medieval	383260	772136	133189	NO87SW0226
<i>Settlement &amp; Agriculture - Buildings</i>							
14742	Sandend Bay	Building	Post-Medieval	356482	866307	350364	NJ56NE0318
14780	Seagreens	Building(s), Enclosure(s)	Post-Medieval	377990	765880	158368	NO76NE0145
14873	26 Crovie	Cottages	Post-Medieval	380812	865518		NJ86NW0037
14925	Red Haven	Buildings	Post-Medieval	356491	866311	350364	NJ56NE0051
15221	Ugie Mouth, Peterhead	Settlements	Period Unknown	412312	847244	21153	NK14NW0008
15241	Boddam Castle	Buildings, Corn Drying Kiln?	Post-Medieval	413110	841837	143822	NK14SW0238
15720	Johnshaven, Fore Street, Fishermans Bothy	Cottage	Modern	379671	767046	316656	NO76NE0158

SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
14558	Inverbervie, Hallgreen Castle, Stables	Stable	Post-Medieval	383220	771950	347822	NO87SW0224
<i>Landscapes of resource exploitation &amp; repeated human activity</i>							
12581	Sands of Forvie hut circles	Settlement	Prehistoric	401037	826352	20850	NK02NW0002
12666	Sands of Forvie ring cairn	Ring Cairn	Prehistoric	401080	826280	20856	NK02NW0003
12668	Sands of Forvie kerb cairns	Kerb Cairn	Prehistoric, Bronze Age	401170	826570	20843	NK02NW0013
14477	Sands of Forvie	Lithic Working Site	Prehistoric	401000	825100	87194	NK02NW0032
14478	Sands of Forvie	Lithic Working Site	Prehistoric	401002	825196	88828	NK02NW0018
14530	Sands of Forvie	Rig and Furrow	Medieval, Post-Medieval	400600	826100	111269	NK02NW0020
14553	Sands of Forvie	Midden(s)	Multi-Period	400700	825800	165124	NK02NW0046
14870	Sands of Forvie	Cores, Flakes, Flints, Scrapers	Prehistoric	400814	824396	-	NK02SW0003
15258	Peterhead Golf Club	Flints	Prehistoric	412011	847565	117707	NK14NW0073
15306	Sands of Forvie	Lithic Working Site	Prehistoric	401000	825200	88828	NK02NW0045
15734	Sands of Forvie	Shell Midden	Iron Age, Early Medieval	400793	825553	165124	NK02NW0046
<i>Religious</i>							
14470	St Combs, Old Church	Church	Medieval	405640	863170	21121	NK06SE0001
14527	Gourdon, Seaview Terrace	Long Cist	Post-Medieval	383030	770880	74375	NO87SW0066
14562	Gardenstown, St John's Church	Burial Ground, Church	Multi-Period	379109	864464	19282	NJ76SE0002
14664	Westerhall, St John's Well	Holy Well	Medieval	379160	864530	19286	NJ76SE0017
14880	Red Well, Whitehills	Well House	Period Unknown	366157	865320	-	NJ66SE0127
15295	Ugie Mouth, Peterhead	Coffins	Period Unknown	412312	847248	21153	NK14NW0065



SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
15721	Forvie Church	Church, Midden, Village, Pin (Bronze), Spindle Whorl(s), Unidentified Pottery	Medieval	402071	826620	20839	NK02NW0001
<i>Castles and Forts</i>							
14472	Inverugie, Castle	Castle, Harbour	Medieval	412300	847450	21270	NK14NW0007
14628	Boddam Castle	Castle	Period Unknown, Medieval?	413201	841801.1	21292	NK14SW0038
14707	Findlater Castle	Castle	Medieval	354180	867200	17948	NJ56NW0010
14753	Slains Castle	Castle, Country House	Medieval, Post-Medieval	410150	836100	21149	NK13NW0001
14809	Dundonnachie	Fort	Multi-Period	413160	841260	75949	NK14SW0037
15236	Castle of Findon	Castles, Ditches, Forts, Stones	Medieval	379405	864327	19285	NJ76SE0004
15297	Boddam Castle	Castle	Medieval	413209	841800	21292	NK14SW0002
<i>Military – WW2</i>							
14475	Cairnbulg, Type 24 Pillbox	Pillbox	Second World War	403519	865568	80724	NK06NW0007
14482	Tangleha' Cottages	Anti-tank Blocks	Second World War	377080	764960	250713	-
14509	Foveran Links	Anti-tank Blocks	Second World War	400200	823000	319903	NK02SW0009
14556	Sands of Forvie	Anti-tank Blocks	Second World War	400610	824310	319902	-
14579	Foveran Links, Aircraft Immobilisation Posts	Anti Glider Posts	Second World War	400433	823793	88830	NK02SW0005
14580	Sands of Forvie	Anti-tank Blocks, Pillbox	Second World War	400880	824450	88836	NK02SW0004
14583	Rattray Head	Anti-tank Blocks	Second World War	410530	858050	249648	NK15NW0005
14613	Cairnbulg, cable shore	Anti-tank Blocks	Second World War	403500	865610	194342	-

SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
14614	Fraserburgh Bay, Bridge of Philorth	Anti-tank Blocks	Second World War	402880	865000	194358	-
14631	Bay of Cruden	Anti-tank Blocks, Pillbox(s)	Second World War	408280	834697	81337	NK03SE0011
14634	Bay of Cruden	Pillbox	Second World War	408321	834144	250578	-
14653	Craigewan Links	Pillbox	Second World War	411750	848650	319941	NK14NW0079
14703	Cairnbulg, Fraserburgh Bay	Anti-tank Blocks	Second World War	403110	865320	194346	
14721	Fraserburgh Bay, Type 24 Pillbox	Pillbox	Second World War	402896	865000	81290	NK06NW0010
14722	Whitelinks Bay, Type 24 Pillbox	Pillbox	Second World War	404915	864424	81291	NK06SW0037
14723	Port Erroll	Anti-tank Blocks, Pillbox(s)	Second World War	409317	835978	81336	NK03NE0059
14724	Sandend Bay	Anti-tank Blocks	Second World War	355800	866070	81546	NJ56NE0038
14725	Peterhead, Craigewan	Anti Invasion Defence Site, Pillbox	Second World War	412048	847924	88887	NK14NW0067
14727	St Fergus, Craigewan Links	Pillbox	Second World War	411652	849627	250618	NK14NW0081
14738	Sandend Bay, Type 24 Pillbox	Pillbox	Second World War	356081	866022	290432	NJ56NE0040
14740	Port Errol	Trench	Second World War	409471	835705	341202	
14745	Fraserburgh, Esplanade	Military Installation	Second World War	400050	865900	194378	
14763	Balmedie Links	Pillbox	Second World War	398070	818360	80770	NJ91NE0019
14765	Sandend Bay, Type 24 Pillbox	Pillbox	Second World War	355470	866227	81549	NJ56NE0037
14767	St Combs, Charleston	Anti-tank Blocks, Pillbox	Second World War	405400	863500	249653	NK06SE0017
14784	Sandend Bay, Anti-tank gun blockhouse	Pillbox	Second World War	356082	866015	290431	NJ56NE0039
14790	Point of Whitelinks	Pillbox	Second World War	404931	864749	367282	

SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
14791	Fraserburgh, Esplanade	Pillbox	Second World War	400112	865852	367295	NK06NW0136
14810	Whitelinks Bay, Type 24 Pillbox	Anti-tank Blocks, Pillbox	Second World War	405317.8	863896.1	81292	NK06SE0010
14811	Bay of Cruden	Pillbox	Second World War	408300	833803	81338	NK03SE0009
14812	Balmedie Links	Anti-tank Blocks, Pillbox(s)	Second World War	397573	817559	81393	
14815	Port Erroll Harbour	Anti-tank Blocks	Second World War	409491	835652	106988	NK03NE0060
14817	St Combs, St Comb's Haven	Pillbox	Second World War	405710	863200	249652	
14818	East Mathers Cottage	Pillbox	Second World War	377778	765883	250691	NO76NE0045
14835	Blackdog Burn	Tank Trap(s)	Second World War	396518	813955	297179	NJ91SE0019
14838	Craigewan Links, Cuttie Burn	Pillbox	Second World War	411726	849961	367562	NK14NW0082
14839	Fraserburgh, Fraserburgh Bay	Anti-tank Blocks	Second World War	400280	865750	194364	
14842	Whitelinks Bay	Anti-tank Blocks, Trench(s)	Second World War	404930	864430	202740	NK06SW0051
14845	Whitelinks Bay	Aircraft, Crash-Sites	Second World War	405526	863480	-	NK06SE0012
14867	Menie Burn	Blocks	Second World War	398791	820025	-	NJ91NE0070
14868	Craigewan Beach	Pill-Boxes	Second World War	411783	848578	-	NK14NW0079
14891	Sandhaven	Observer-Posts	Second World War	396292	867595	-	NJ96NE0038
14894	Blairton Burn	Blocks, Defences, Pill-Boxes	Second World War	398582	819576	-	NJ91NE0139
14896	Fraserburgh Bay	Emplacements	Second World War	400192	865750	-	NK06NW0012
14908	Bay of Cruden	Blocks, Pill-Boxes	Second World War	408621	835473	-	NK03NE0062
14910	Jenny's Burn	Pill-Boxes	Second World War	411720	849196	-	NK14NW0080



SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
14913	Goats Hillock	Bunkers, Observer-Posts, Posts	Modern	409749	835566	-	NK03NE0126
14919	Balmedie	Blocks	Second World War	397356	816434	-	NJ91NE0069
14930	Seagreens	Anti-tank Blocks	Second World War	377936	765909	-	NO76NE0046
14931	Foveran Links	Buildings, Emplacements	Second World War	400523	823761	-	NK02SW0008
14952	Eigie Links	Hut-Platforms	Second World War	397734	817632	-	NJ91NE0068
14957	Jenny's Burn	Pill-Boxes	Second World War	411687	849592	-	NK14NW0081
15226	Goats Hillock	Radar-Stations	Second World War	409652	835723	81335	NK03NE0057
15301	Whitelinks Bay, Type 24 Pillbox	Anti-tank Blocks, Pillbox	Second World War	405034	864106	81292	NK06SE0009
15302	Port Errol	Anti-tank Blocks, Pillbox(s)	Second World War	409314	835829.8	81336	NK03NE0058
15654	Balmedie beach	Posts, Antiglider Posts?	Second World War, Period Unknown	398298	818739	-	NJ91NE0069
15655	Balmedie Beach	Posts, Antiglider Posts?	Second World War, Period Unknown	398431	819039	-	NJ91NE0069
15656	Balmedie Beach	Posts, Antiglider Posts?	Second World War, Period Unknown	398578	819397	-	NJ91NE0069
15658	Balmedie Beach	Posts, Antiglider Posts?	Second World War	398657	819533	-	NJ91NE0069
15695	Milton of Mathers	Pillbox	Second World War	377346	765517	-	NO76NE0040
15696	Milton of Mathers	Pillbox	Second World War	377089	765307	250689	-
15698	Rattray Head	Pillbox	Second World War	410331	857661	203987	NK15NW0006
15699	Kirkton Head	Anti-tank Blocks	Second World War	411866	850264	-	NK14NW0084

SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
15702	Craigewan Links, Cuttie Burn	Anti-tank Blocks	Second World War	411608	849173	367561	-
15703	Kirkton Head	Anti-tank Block	Second World War	411892	850297	-	NK14NW0084
15704	Kirkton Head	Anti-tank Blocks	Second World War	411954	850459	-	NK14NW0084
15705	Kirkton Head	Anti-tank Block	Second World War	411951	850528	-	NK14NW0084
15722	Garpelhead	Pillbox	Second World War	400069	826844	201497	NK02NW0049
15739	Balmedie, Drumside Links	Anti-tank Blocks	Second World War	397955	818078	-	NJ91NE0069
15743	Foveran Links	Pillbox	Second World War	400449	823809	319904	NK02SW0011
15744	Foveran Links	Anti-tank blocks	Second World War	400263	823120	31993	NK02SW0009
15746	Foveran Links	Anti Glider Post	Second World War	400432	823337	88830	NK02SW0005
15767	Millden Links	Anti-tank blocks and Pillbox	Second World War	397212	816099	-	NJ91NE0069
14571	Inverbervie, Kinghornie	Pillbox	Second World War	383607	772524	231396	NO87SW0076
14632	Inverbervie, Kinghornie	Anti-tank blocks	Second World War	383612	772505	246834	NO87SW0075
14633	Inverbervie, Bervie Bay	Anti-tank blocks	Second World War	383304	772310	246908	NO87SW125
14825	Inverbervie, Bervie Bay	Pillbox	Second World War	383260	772140	278254	-
14924	Inverbervie	Blocks	Second World War	383398	772447	-	NO87SW0127
14955	Old Home Guard, Johnshaven	Headquarters, Houses	Post-Medieval	379740	767084	-	NO76NE0041
<i>Military - Other</i>							
14674	Scotstown, Banff Links, store building	Magazine, Storehouse	Post-Medieval	367665	864492	230526	NJ66SE0254
14700	Johnshaven	Battery, Magazine	Post-Medieval	380140	767240	306810	NO86NW0045
15799	Johnshaven	Battery	Post-Medieval	380152	767220	306810	NO86NW0045
<i>Natural Features</i>							

SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
14715	Cove Hill	Cist(s)	Bronze Age	378410	766270	36323	NO76NE0003
14887	SEAGREENS	Bones	Nil Antiquity	377921	765824	-	NO76NE0085
14912	Forvie Sands	Stone-Circles, Stones	Nil Antiquity	400926	824383	331661	NK02SW0012
<i>Miscellaneous</i>							
14663	Inverboyndie	Midden	Period Unknown	366680	864840	18463	NJ66SE0024
14729	Dundonnachie	Building(s), Enclosure(s)	Post-Medieval	413020	841250	143824	NK14SW0040
14843	Whitehills	Structures	Period Unknown	366147	865316	-	NJ66NE0102
14852	Cairnbulg	Bales	Post-Medieval	403010	865080	-	NK06NW0135
14861	Portsoy	Buildings, Floors	Post-Medieval	359299	866085	-	NJ56NE0300
14876	Cairnbulg	Timbers, Wreckage	Post-Medieval	402750	864950	-	NK06SW0105
14888	Perthudden, Collieston	Stores	Post-Medieval	403640	828114		NK02NW0128
15229	Sands of Forvie	Rig & Furrow	Medieval, Post-Medieval	402578	827283	128953	NK02NW0034
15264	Sands of Forvie	Rig & Furrow	Medieval, Post-Medieval	403209	828153	186088	NK02NW0023

## Appendix 2. Known sites visited on 2022 survey – City of Aberdeen

SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
<i>Maritime - Fishing</i>							
15067	Aberdeen, Cove Harbour	Harbour	Post-Medieval	395540	800590	20245	NJ90SE0016
15161	Altens Haven	Fishing Station	Post-Medieval	396302	802422		NJ90SE0129
15288	Berryhill	Flagstaffs	Post-Medieval	395810	812009	266673	NJ91SE0047



SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
<i>Maritime – Safety and Navigation</i>							
15187	Cove Bay	Lifeboat Station	Post-Medieval	395582	800693	-	NJ90SE0195
<i>Settlement &amp; Agriculture - Boundaries</i>							
14971	Murcar Golf Course, Boundary Stones	Boundary Stone(s)	Post-Medieval	395810	812010	204506	NJ91SE0009
15771	Murcar Golf Course, Boundary Stones	Boundary Stone(s)	Post-Medieval	395868	812004	204506	NJ91SE0011
15806	Burnbanks Haven	Wall, Boundary Stone	Post-Medieval	396171	802130	371475	-
<i>Military – WW2</i>							
14988	Balgownie Links	Anti-tank Blocks, Pillbox	Second World War	395900	811700	125575	NJ91SE0045
14998	Balgownie Links	Anti-tank Blocks	Second World War	395731	810930	80771	NJ91SE0109
15011	Aberdeen, Bridge of Don, Balgownie Links, Anti-Tank Blocks	Anti-tank Blocks	Second World War	395280	809550	202294	-
15022	Cove Bay, Balmoral Terrace	Anti-tank Blocks, Pillbox, Road Block	Second World War	395610	800720	81285	NJ90SE0015
15037	Bridge of Don, Balgownie Links, Pillbox	Pillbox	Second World War	395475	809708	202291	NJ90NE0025
15042	Altens Haven, Ice-House	Anti-tank Blocks, Building(s), Icehouse	Second World War	396331	802464	207553	NJ90SE0120
15044	Aberdeen, Bridge of Don, Pillbox	Pillbox	Second World War	395520	809947	80763	NJ90NE0089
15072	Balgownie Links	Pillbox	Second World War	395720	810943	112292	NJ91SE0109
15079	Balgownie Beach North	Blocks	Second World War	395941	811784	-	NJ91SE0091
15086	Balgownie Beach	Blocks	Second World War	395798	811202	-	NJ91SE0053

SCAPE ID	Site name	Site type	Periods	Easting	Northing	Canmore ID	HER ID
15093	Balgownie Beach South	Blocks	Second World War	395660	810593	-	NJ91SE0089
15098	Burn of Mundurno	Pill-Boxes	Second World War	396345	813338	-	NJ91SE0119
15160	Black Dog Beach	Blocks	Second World War	396363	813357	-	NJ91SE0117
15191	Altens Haven	Hut-bases, Huts	Second World War	396333	802442	-	NJ90SE0121
15193	Burn of Mundurno	Blocks	Second World War	396327	813200	-	NJ91SE0121
15757	Balgownie Links	Anti-tank Blocks	Second World War	396112	812399	-	NJ91SE0091
15758	Balgownie Links	Anti-tank Blocks	Second World War	396183	812627	-	NJ91SE0091
<i>Miscellaneous</i>							
15291	Berryhill	Wells	Post-Medieval	395777	812003	266673	NJ91SE0049

### Appendix 3. New sites - Aberdeenshire

SCAPE ID	Site name	Site type	Periods	Easting	Northing
<i>Maritime - Fishing</i>					
15685	Johnshaven Harbour	Barking Pot	Post-Medieval, Modern	379523	766958
15689	Milton of Mathers	Buildings	Post-Medieval	377407	765357
15690	Tangleha	Winch	Modern	377093	765027
15741	Newburgh, Holy Shore	Fish Trap, Stake Net	Post-Medieval, Modern	400439	824570
<i>Maritime - Craft</i>					
15742	Newburgh, Holy Shore	Fishing vessel	Modern	400446	824583
<i>Maritime - Harbours</i>					
15691	Seagreens, Old Pier	Harbour	Post-Medieval	377963	765816
15786	Cowie Harbour	Harbour, slipway, winch	Modern	387985	786699
<i>Maritime – Landing Places</i>					
15663	Whitehills	Cleared slipway	Post-Medieval	365412	865517
15671	Inverallochy, Scrath Craig	Winch, cleared slipway	Multi-Period	404111	865293

SCAPE ID	Site name	Site type	Periods	Easting	Northing
15672	Inverallochy, West Lake	Winch, cleared slipway	Multi-Period	404258	865273
15673	Inverallochy, Gowan Hole	Cleared slipway, winch	Modern	404446	865113
15674	St Combs	Slipway, Cleared Slipway	Modern	406126	862737
15675	Inverallochy, Boat Hive	Harbour	Post-Medieval	404892	864893
15676	Inverallochy, Boat Hive	Naust, Winch, Mooring ring	Post-Medieval	404900	864875
15711	Whinnyfold, Pittentander	Platform, base, fixing	Period Unknown	408232	833193
15712	Whinnyfold, Poor man of Broad Haven	Cleared slipway, landing beach	Multi-Period	408480	833239
15713	Whinnyfold, Port Keppies	Cleared slipway	Post-Medieval	408557	833346
15716	Cruden Bay Sandy Haven	Cleared slipway, landing beach	Multi-Period	408427	833501
15798	Haughs Bay	Harbour, natural	Period Unknown	381302	768624
<i>Maritime – Safety and Navigation</i>					
15670	Inverallochy harbour	Coastguard Station, Line Throwing Gun Site, Rocket Apparatus	Post-Medieval	403547	865569
<i>Infrastructure &amp; Engineering</i>					
15664	Banff, The Tumblers	Railway, Underpass, Pedestrian	Modern	367631	864487
15686	Fraserburgh Bay	Railway halt	Modern	400095	865844
15692	Seagreens	Wall	Post-Medieval, Modern	377948	765828
15701	Craigewan	Wall	Modern	412023	848241
15724	Collieston, Perthudden	Pump	Modern	403792	828192
15725	Collieston, Perthudden	Boathouse	Modern	403786	828168
15726	Collieston, Perthudden	Pump	Modern	403751	828202
15736	Collieston, Perthudden	Pump	Modern	403810	828165
15794	Gourdon, Horse Crook Bay	Track, railway	Post-Medieval	383156	771161



SCAPE ID	Site name	Site type	Periods	Easting	Northing
<i>Settlement &amp; Agriculture - Buildings</i>					
15529	Pennan Mill Bay	Wall	Post-Medieval	384053	865744
15530	Gardenstown	Building	Post-Medieval	379520	864490
<i>Settlement &amp; Agriculture - Boundaries</i>					
15793	Inverbervie	Boundary walls	Post-Medieval	383298	771771
<i>Landscapes of resource exploitation &amp; repeated human activity</i>					
15731	Sands of Forvie	Lithic Scatter	Prehistoric	400769	825661
15735	Sands of Forvie	Shell Midden	Iron Age, Early Medieval	400889	824799
<i>Military – WW2</i>					
15657	Balmedie Beach	Posts, Wooden	Second World War, Period Unknown	398217	818377
15687	Fraserburgh Bay	Magazine	Second World War	400147	865764
15693	Tangleha	Anti-tank blocks	Second World War	377041	765162
15700	Craigewan Links	Pillbox	Second World War	411641	849071
15715	Whinnyfold, Port Keppies	Military Observation Site?	Modern	408558	833311
15717	Cruden Bay Golf Course burn	Anti-tank Blocks	Second World War	408222	834434
15747	Bay of Cruden	Anti-tank Blocks	Second World War	408316	834842
15761	Blackdog Rock	Posts	Second World War	396549	813755
15762	Blackdog Links	Post	Second World War	396886	815032
15763	Blackdog Links	Posts	Second World War	397115	815676
15764	Millden Links	Posts	Second World War	397148	815755
15765	Millden Links	Anti Glider Posts	Second World War	397245	816056
15766	Eggie Links	Anti-tank Blocks	Second World War	397688	817406
15795	Portlethen Bay	Anti-tank Blocks	Second World War	393466	796278
15797	Newtonhills, Skateraw	Anti-tank Block	Second World War	391411	793539
<i>Military – Other</i>					
15792	Mudlins Den, Inverbervie	Building, Battery	Post-Medieval	383299	771720
<i>Natural Features</i>					
15732	Forvie	Stone alignment	Period Unknown	400779	825641

SCAPE ID	Site name	Site type	Periods	Easting	Northing
<i>Miscellaneous</i>					
15531	Gardenstown	Posts	Period Unknown	379563	864528
15533	Cullykhan Shore	Building	Modern	383746	866138
15665	Whitehills, Knock Head	Midden, 20th Century	Modern	365838	865965
15666	Sandend	Mound	Post-Medieval	356127	866089
15677	Inverallochy, Washing Hive	Drying Yard	Modern	404634	865002
15694	Johnshaven	Building	Post-Medieval	379070	766675
15707	Whinnyfold	Building	Modern	408285	833245
15710	Whinnyfold	Building foundations	Modern	408398	833158
15714	Whinnyfold, Broadhaven	Structure	Modern	408455	833269
15723	Sands of Forvie, Waterside	Railway Carriage, re-used	Modern	400851	826993
15728	Port Errol, Wardhill	Building	Post-Medieval	409531	835693
15729	Sands of Forvie	Well	Post-Medieval	400718	825739
15749	Eggie Links	Wooden structure, Posts	Period Unknown	397737	817304

### Appendix 3. New sites – City of Aberdeen

SCAPE ID	Site name	Site type	Periods	Easting	Northing
<i>Maritime - Fishing</i>					
15804	Burnbanks Haven	Fishing Station	Post-Medieval	396061	802069
<i>Military – WW2</i>					
15750	Burn of Mundurno	Posts	Second World War	396384	813212
15751	Balgownie Links	Anti Glider Posts	Second World War	396174	812512
15752	Balgownie Links	Post, metal	Period Unknown, Second World War	396218	812676
15753	Balgownie Links	Posts	Second World War	396250	812765
15754	Balgownie Links	Anti Glider Posts	Second World War	395957	811758
15755	Balgownie Links	Anti Glider Posts	Second World War	395941	811680

SCAPE ID	Site name	Site type	Periods	Easting	Northing
15756	Balgownie Links	Anti Glider Posts	Second World War	396025	811973
15759	Balgownie Links	Anti-tank Blocks	Second World War	396213	812765
15760	Balgownie Links	Anti Glider Posts	Second World War	396334	813020
<i>Miscellaneous</i>					
15805	Altens Haven	Concrete structure, platform	Modern	396343	802509