
Dynamic Dunescapes

DuneLIFE Project

Barrow-in-Furness

Cumbria



JANUARY 2022

**Archaeological Watching Brief
Report EH152/01**

Dynamic Dunescapes DuneLIFE Project, Barrow-in-Furness, Cumbria

Archaeological Watching Brief Report For Natural England

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Heritage Impact Assessment
Archaeological Desk-Based Assessment
Historic Landscape Survey
Written Scheme of Investigation

Geophysical Survey
Trial Trench Evaluation
Archaeological Excavation
Archaeological Watching Briefs

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SUMMARY

In 2021 Eden Heritage Ltd was commissioned by Natural England, to undertake an archaeological watching brief on the coast near Barrow-in-Furness, Cumbria. The archaeological work was undertaken during the restoration of sand dunes to improve biodiversity and was associated with the Dynamic Dunescapes DuneLIFE Project.

The Furness Peninsula is known to have been a focus of prehistoric activity from the Mesolithic period onwards. Previous archaeological investigations have revealed evidence of prehistoric occupation at North Walney including hearths, middens, Beaker pottery and lithic tools of probable Late Neolithic/Early Bronze Age date.

The archaeological watching brief was undertaken over thirteen days between 17th December 2021 and 20th January 2022 during the removal of vegetation from the sand dunes at pre-determined locations at Askham-in-Furness and North Walney. This work comprised the close monitoring of turf removal by machine from two defined areas on the sand dunes at Askham-in-Furness and from three separate areas North Walney.

No archaeological finds, features or deposits were identified during the archaeological watching brief. The excavations undertaken at Askham and North Walney were generally very shallow and comprised only the removal of vegetation which had probably established itself in the 20th century. Therefore, it was determined that the works did not reach the depths required to reach the level of the recorded archaeological remains.

As this archaeological watching brief was conducted as part of a recommendation to observe groundworks in association with the removal of vegetation, no further work is deemed necessary. However, given the potential for further remains in the area, it is anticipated that any future excavation work will be subject to a similar programme of archaeological investigation, if any works are proposed to be undertaken to greater depths.

AKNOWLEDGEMENTS

Eden Heritage Ltd thanks Richard Storton at Natural England for commissioning the project, and for all assistance throughout the work. Eden Heritage Ltd also thanks Mark Brennand at Cumbria County Council and Stephen Benn of Cumbria Wildlife Trust for their assistance and information. Eden Heritage Ltd also thanks Scott Neillands of SWN Plant Ltd for his help on site during the fieldwork.

The archaeological watching brief was undertaken by Martin Railton, who also produced the report.

1 Introduction

1.1 Project Circumstances

- 1.1.1 The following document outlines the results of an archaeological watching brief undertaken as part of the Dynamic Dunescapes DuneLIFE Project near Barrow-in-Furness, Cumbria. The archaeological work was undertaken on behalf of Natural England at two locations on the southwest coast of Cumbria, at Askham-in-Furness and North Walney (centred on Ordnance Survey grid references SD 2081 7687 and SD 1734 7321; Figure 1). The work was undertaken during the removal of turf from the sand dunes to help combat biodiversity loss currently being experienced by the coastal dunes.
- 1.1.2 The Askham-in-Furness site was located on the southwest side of the village, which is located on the northern coast of the Furness Peninsula, being situated approximately 8km to the north of Barrow-in-Furness. The project site was on the dunes immediately to the east of Askham-in-Furness Beach (Figure 2). The North Walney site was situated on the northern tip of Walney Island, situated c.4.75km to the northwest of Barrow-in-Furness, located to the north of Walney Airfield (Figure 3).
- 1.1.3 The Furness Peninsula is known to have been a focus of prehistoric activity from the Mesolithic period onwards. Previous archaeological investigations have revealed evidence of prehistoric occupation including a sand dune occupation site at Walney North End, including hearths, middens, Beaker pottery and lithic tools of probable Late Neolithic/Early Bronze Age date (Brennand 2006,33).
- 1.1.4 As a result, Mark Brennand, Lead Officer Historic Environment and Commons at Cumbria County Council advised that the turf removal work near the recorded archaeological sites should be subject to archaeological monitoring, in order to record any archaeological evidence revealed by the works.

2 Methodology

2.1 Scope of the Work

2.1.1 The project comprised an archaeological watching brief, which was maintained over thirteen days during the removal of turf from the sand dunes at Askham-in-Furness and North Walney (Figure 1).

2.1.2 The general aim of the watching brief was to record any archaeological evidence revealed by the work, in order to attempt to re-construct the history and past-use of these areas. This comprised close monitoring of the excavation work undertaken by the groundworks contractor, followed by the archaeological investigation and recording of any archaeological features or deposits identified.

2.2 Archaeological Watching Brief

2.2.1 An archaeological watching brief consists of a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons, in this case during the removal of turf. All fieldwork was carried out in accordance with codes and practices outlined by the Chartered Institute for Archaeologists regarding archaeological watching briefs (CIfA 2020a).

2.2.2 In summary, the main objectives of the watching brief were:

- to establish the presence/absence, nature, and extent of archaeological remains revealed by the works and to record these where they are observed;
- to investigate and record any evidence for archaeological features or finds present;
- to establish the character of those features in terms of cuts, soil matrices and interfaces;
- to recover artefactual material, especially that useful for dating purposes;
- to recover palaeoenvironmental material (where it survives) in order to understand site and landscape formation processes;

2.2.3 The excavation was undertaken using an 8 ton tracked excavator with a ditching bucket under close archaeological supervision. The excavation was undertaken to strip the vegetation from several pre-defined areas of the sand dunes. At Askham-in-Furness this vegetation mainly comprised course turf and some areas of invasive *Rosa rugosa* (Figure 2). At North Walney

2.2.4 All potential archaeological features encountered were investigated and recorded according to standard recording procedure as set out in the Museum of London Archaeological Service Archaeological Site Manual (Museum of London 1994). All written records utilised the Eden Heritage *pro-forma* record sheets. A full photographic record in digital format was maintained.

2.2.5 No finds were recovered during the watching brief and no environmental evidence was encountered during the work, therefore no samples were taken.

2.3 Archive

2.3.1 The project archive has been prepared in accordance with the recommendations in *Archaeological Archives: A Guide to Best Practice in Creation, Compilation, Transfer and Curation* (Brown 2011) and will be maintained by Eden Heritage Ltd. The archive can be accessed under the unique project identifier EH105, GHC/A.

2.3.2 Copies of the final report (in PDF/A format) will be provided to Cumbria County Council Historic Environment Record (HER), where viewing will be available on request.

2.3.3 Eden Heritage Ltd supports the **Online Access to the Index of Archaeological InvestigationS (OASIS)** project. This project aims to provide an online index and access to the extensive and expanding body of grey literature created as a result of developer-funded archaeological fieldwork. As a result, details of the results of this study will be made available by Eden Heritage Ltd as a part of this national project, and a copy of the report will be uploaded to OASIS. The OASIS reference is: edenheri1-504104.

3 Background

3.1 Location and Geological Context

- 3.1.1 Barrow-in-Furness is a port town in the borough of the same name in the south of Cumbria; historically in part of Lancashire. The town lies at the southern tip of the west Cumbria coastal plain to the south of the Duddon Estuary, north of Morecambe Bay and east of Walney Island (Figure 1).
- 3.1.2 Askham-in-Furness is located on the coast approximately 8km to the north of Barrow-in-Furness to the east of the Duddon Estuary, north of Roanhead. The Askham-in-Furness project site was located immediately to the southwest of the village, to the east of Askham-in-Furness Beach centred on Ordnance Survey grid reference SD 2081 7687 (Figure 2). The site was separated from the beach by a prominent sandbar, the site having an average elevation of c.10m aOD (above Ordnance Datum).
- 3.1.3 Walney Island (also known as the Isle of Walney) is separated from the mainland by the narrow Walney Channel, which is spanned by Jubilee Bridge. It is the largest of the Walney Island group and was formed during the last glacial period, when the River Duddon deposited glacial till at its mouth. The North Walney project site was located on the sand dunes at the northern tip of the island, north of the Walney Airfield, centred on Ordnance Survey grid reference SD 1734 7321 (Figure 3). Elevations at the North Walney project site ranged between approximately 6m and 10m aOD.
- 3.1.4 The geology of the Askham-in-Furness site is Martin Limestone Formation. This sedimentary bedrock formed approximately 345 to 359 million years ago in the Carboniferous Period, overlain by tidal flat deposits of clay and silt, formed up to 2 million years ago in the Quaternary Period. These are overlain by coarse-grained sands forming beaches and bars (BGS 2022).
- 3.1.5 The geology of the North Walney site is mustone, known as Singleton Mudstone Member, formed approximately 242 to 252 million years ago in the Triassic Period. This is overlain by medium and fine-grained wind-blow sands forming lenses, beds and dunes (BGS 2022).

3.2 Archaeological and Historic Background

- 3.2.1 Evidence of Late Neolithic and Early Bronze Age occupation has been discovered on the sand dunes at Walney Island, which was likely preceded by the Mesolithic exploitation of the island.
- 3.2.2 During archaeological investigations undertaken between 1936 and 1950 numerous lithics tools dating to the Late Neolithic and Bronze Age were recovered from the north end of Walney Island leading to the conclusion that it was the site of a 'prehistoric flint factory' as suggested by the evidence of flint working. Bronze Age artefacts and sherds of Beaker pottery were also recovered (Cross 1938, Cross 1939, Cross 1942, Cross 1946, Cross 1947, Cross 1949 and Cross 1950). A midden

site was also identified at the north end of the island, which was associated with a heath and occupation debris suggesting occupation from the Neolithic to the Iron Age (Barnes 1955).

- 3.2.3 The Cumbria Historic Environment Record locates the North End Haws Settlement (HER 1496) to the north of Walney Airfield in close proximity to the North Walney project site (Figure 3). The site included large quantities of Neolithic/Bronze Age implements including polished stone axes, flint scrapers, scorers, barbed and tanged and leaf-shaped arrowheads, knives, anvils, cores and 'winkle pins', along with midden refuse containing shells, charcoal and animal bones, bone objects, a bronze pin and a perforated bronze lozenge. Two axes (HER 5598 and HER 2709) and a flint arrowhead (HER 2720) are also recorded as having been found in the north of the island. In total it is believed that at least eight separate sites were identified by Cross and Barnes, but most of these were poorly located. A Neolithic stone axe has been recovered from the beach at Roanhead to the south of the Askham-in-Furness (HER 2201), along with a further possible Neolithic/Bronze Age lithic working/occupation site (HER 1498), which is located approximately 1.5km to the south of the project site (Figure 2).
- 3.2.4 A possible medieval bloomery site was identified in the north of the island by Barnes (Barnes 1955) although its presence has yet to be confirmed (HER 19760). Walney Island was largely rural during the medieval and post-medieval periods, with a local economy based on farming and fishing. Furness Abbey is believed to have had a grange at North Walney and another at South Walney. Possible medieval ridge and furrow has been identified at North End Haws (Greenlane Archaeology 2015a).
- 3.2.5 The island remained rural until the growth of Barrow-in-Furness' industries in the nineteenth century. The local economy was transformed with the coming of the Furness Railway in 1846 and the rapid expansion of exploitation of local coal and iron ore deposits (Winchester 2017, 43). A new harbor was constructed in 1863 and the development between 1867 and 1881 of docks at Barrow Island (in Walney Channel opposite Walney) encouraged the growth of Walney as a settlement (Ibid).
- 3.2.6 The earliest readily-available maps and plans which depict Walney Island in detail show the northern tip of the island as featureless and unenclosed. The 1842 Plan of the Isle of Walney by John Robinson shows that a small hamlet named North End has been established in the northern part of the island (to the south of the project site) by this time, with a network of enclosed fields laid out to the south and east across the island. However, no features are depicted near the North Walney project site.
- 3.2.7 The associated Plan of Ireleth of the same date depicts the area of Askham-in-Furness as a network of agricultural fields, and the Askham-in-Furness project site is shown as featureless coastline. The First Edition 6" to one mile Ordnance Survey map of 1850 depicts the coastline south of Askham-in-Furness as salt marsh and rabbit warrens. The North Walney Project Site is named as North End and the island tip is North End Haws, but the area is also shown as undeveloped coastline on this map.

- 3.2.8 By the time of the 1891 Ordnance Survey map the area to the south of Askham-in-Furness had been transformed with the construction of the Askham Iron Works. Askham village was also being laid out by this time. This included Victoria Street to the east of the project site. Spoil heaps from the iron works developed to the north of the project site, which is shown as being undeveloped on this map. The subsequent Ordnance Survey map of 1913 shows the Askham-in-Furness site as sand dunes, and the sand bar located immediately to the west is depicted as an earthwork. To the east were several isolated small rectangular structures, annotated as 'The Lots', which were possibly timber huts.
- 3.2.9 The major iron ore deposits were situated at Askam, Roanhead, Park, Yarlside, Stank, Mouzell, Crossgates, Marton and Lindal (Industrial History of Cumbria 2022). At Askham-in-Furness there is still visible evidence of iron working around the project site in the form of substantial spoil heaps (HER 40357) to the north and southeast. Woodhead Iron Mines (HER 18400), Askham Pit (HER 40358) and Park Knott's Mineshaft (HER 18398) are recorded nearby. The Roanhead Mineral Railway (HER 18399) is believed to have transported ore to Askham Pier located to the northwest until its closure.
- 3.2.10 North End was depicted as 'Rabbit Warren' on the 25" to one mile Ordnance Survey map of 1891 and on subsequent historic mapping. It appears to have remained undeveloped up until the present.

3.3 Previous Archaeological Work

- 3.3.1 Between 2011 and 2012 a rapid coastal zone assessment was undertaken of the northwest coastline and the information used to update the various county Historic Environment Records (HERs) including Cumbria HER. This assessment identified that Mesolithic and Neolithic flint scatters at North End Haws were at medium to high risk of being lost to coastal erosion (ARS Ltd 2012).
- 3.3.2 In 2015 an archaeological desk-based assessment and walkover survey was undertaken of sand dunes on Walney Island in association with proposed habitat improvements. It was determined that the recorded evidence of Neolithic/Bronze Age activity at the north end of Walney Island may have been at risk, either being exposed on the surface or only shallowly buried due to coastal erosion (Greenland Archaeology 2015a). As a result, an archaeological evaluation was undertaken covering the area of the proposed habitat improvement works. This comprised a series of 1m² test pits which were excavated in the north end of the island, all of which revealed layers of sand, with dark bands containing slag and other industrial residue, beneath which was the surface of the original cobble beach (Greenland Archaeology 2015b). The industrial material was believed to have derived from the slag banks on the mainland and was associated with 19th century industrial developments.
- 3.3.3 In 2016 it was reported that sherds of pottery were visible in the vicinity of recently excavated toad-scrapes close to the North Walney Project Site, which may have been prehistoric in date (HER 1496).

Inspection of this area during the present project identified burnt stone adjacent to one of the ponds, which were situated to the immediately south of the dunes to the south of Area 4 (see Figure 3).

- 3.3.4 In 2017 a desk-based assessment of military archaeological remains was undertaken on Walney Island as part of the Morecambe Bay Partnership Headlands to Headspace Project. No military features were recorded at North Walney but First World War practice trenches were recorded on the sand dunes to the south of the project site. Barrow airfield was opened during the Second World War in 1941 and closed in 1946. It has since been a private airfield (Morecambe Bay Partnership 2017).

4 Archaeological Watching Brief

4.1 Introduction

- 4.1.1 The archaeological watching brief was undertaken over thirteen days between 17th December 2021 and 20th January 2022 during the removal of vegetation from the sand dunes at pre-determined locations at Askham-in-Furness and North Walney (Figure 1). This work comprised the close monitoring of turf removal by machine from two areas (Area 1 and Area 2) at Askham-in-Furness and from three North Walney (Area 3, Area 4 and Area 5).
- 4.1.2 The excavation at Askham-in-Furness comprised the removal of turf from an area measuring approximately 65m by 60m (Area 1) to a depth of approximately 0.1m below ground level (blg). To the south, two adjacent areas measuring approximately 35m by 20m and 50m by 35m were also stripped of turf (Area 2). In each area smaller patches of *Rosa rugosa* were also removed to their roots, which required deeper excavation up to approximately 1.0m blg (see Figure 2; Plates 1 & 2).
- 4.1.3 The excavations at North Walney comprised the removal of turf to a depth of approximately 0.1m blg from two L-shaped areas to the northeast and southeast of a wide relatively flat plain located between high sand dunes (see Figure 3; Plates 3 & 4). Area 3 measured approximately 90m by 75m and was bisected by a dune ridge, incorporating the southwest side of a high sand dune (Plate 3). Area 4 measured approximately 70m by 50m including the northeast side of a high dune (Plate 4).



Plate 1: Area 1 at Askham-in-Furness following vegetation removal, looking northeast



Plate 2: Area 2 at Askham-in-Furness following vegetation removal, looking southeast



Plate 3: Area 3 at North Walney following vegetation removal, looking northwest

- 4.1.4 Area 5 was located approximately 250m to the west of Area 3 and Area 4 and was separated from them by several high sand dunes. Area 5 comprised a linear area measuring approximately 100m by 20m on the northwest side of Walney Island and incorporated the south side of several undulating dunes, which separated the inland of the island from the beach (see Figure 3; Plate 5).



Plate 4: Area 4 at North Walney following vegetation removal, looking north



Plate 5: Area 5 at North Walney following vegetation removal, looking north

4.2 Results

- 4.2.1 The vegetation removal at Askham-in-Furness revealed only natural yellow/orange sand beneath the turf, there being no topsoil present beneath the rhizome layer. The sand was devoid of archaeological finds or features, and contained only modern plastics, glass and metal, which was

evidently incorporated into the sand dunes prior to/during the growth of the existing vegetation. A small section of the sand bank to the west of the project area was also exposed by the work (Plate 6). There was no evidence for industrial activity despite the close proximity to the spoil heaps associated with Askham Iron Works (HER 40357). A fragment of slag was recovered nearby (Plate 7).



Plate 6: Area 1 at Askham-in-Furness showing the sand bank, looking northwest



Plate 7: Area 2 at Askham-in-Furness showing proximity to adjacent spoil heaps, looking south

4.2.2 The excavation work at North Walney revealed a similar sequence of natural yellow/orange sand at 0.05m blg beneath the turf, there being no topsoil present beneath the rhizome layer (Plate 8). In addition, a small area measuring approximately 15m by 7m was excavated to a depth of c.0.5m at the southwest corner of Area 3 to create a new pond, due to the low-lying location. A very thin peaty soil measuring 0.05m deep was revealed at this location due to the wetness of the area (Plate 9).



Plate 8: Area 3 at North Walney showing the sand dunes following turf removal, looking south



Plate 9: Area excavated for a pond in Area 3 at North Walney, looking east (1m scale)

- 4.2.3 The sand at North Walney was also devoid of archaeological finds or features, and contained only occasional modern plastics, glass and metal, which was evidently incorporated into the sand dunes prior to/during the growth of the existing vegetation. Much of the work involved the stripping of vegetation of sand from the sides of sand dunes where there was limited/no potential (Plate 10).



Plate 10: Exposed area of sand dune in Area 4 at North Walney, looking southwest (1m scale)

4.3 Discussion

- 4.3.1 The excavations undertaken at Askham and North Walney were generally very shallow and comprised only the removal of vegetation which had probably established itself in the 20th century. Modern finds (mainly plastics) were recovered from the sands immediately beneath the vegetation, indicating that these had also formed relatively recently. Much of the excavation was undertaken on the sides of the sand dunes where there was very limited/no potential for archaeological remains.
- 4.3.2 The deepest excavations were undertaken for a small pond at North Walney in Area 3 to a depth of c.0.5m and for the removal of patches of *Rosa rugosa*, where excavation reached approximately 1m. However, no archaeological finds, deposits or features were identified during any of the excavations.
- 4.3.3 It was note during the project that the previous excavations undertaken at North Walney to create new ponds were located in much a lower-lying area to the south of Area 4. The prehistoric deposits which were reported as being exposed by this work were evidently buried to a greater depth than was reached by any of the work undertaken for the current Dynamic Dunescapes DuneLIFE Project.

5 Conclusions

1.1 Interpretation

1.1.1 No archaeological finds, features or deposit were identified during the archaeological watching brief at Askham and North Walney, which is likely due to the shallow nature of the excavations undertaken and their sand dune locations. The excavation work mainly comprised the removal of vegetation from the surfaces of sand dunes, which had probably formed relatively recently as indicated by the presence of modern plastics. Several of the excavations were also undertaken on the steep sides of the sand dunes where there was very limited/no potential for archaeological remains to be present.

1.2 Research Potential

1.2.1 Evidence of prehistoric activity has previously been identified in close proximity to the project site at North Walney. This includes North End Haws Settlement (HER 1496), which is recorded in the Historic Environment Recorded to be located midway between Area 3 and Area 4 (Figure 3). Archaeological deposits were also identified during the excavation of ponds to the south of Area 4. It is therefore considered that further prehistoric archaeological deposits are likely to survive beneath the dunes at North Walney, but at a greater depth than was reached by the current project work.

1.2.2 It is recommended that a further archaeological watching brief be undertaken during any future excavations at North Walney, if works are proposed to be undertaken in lower-lying locations or to a greater depth.

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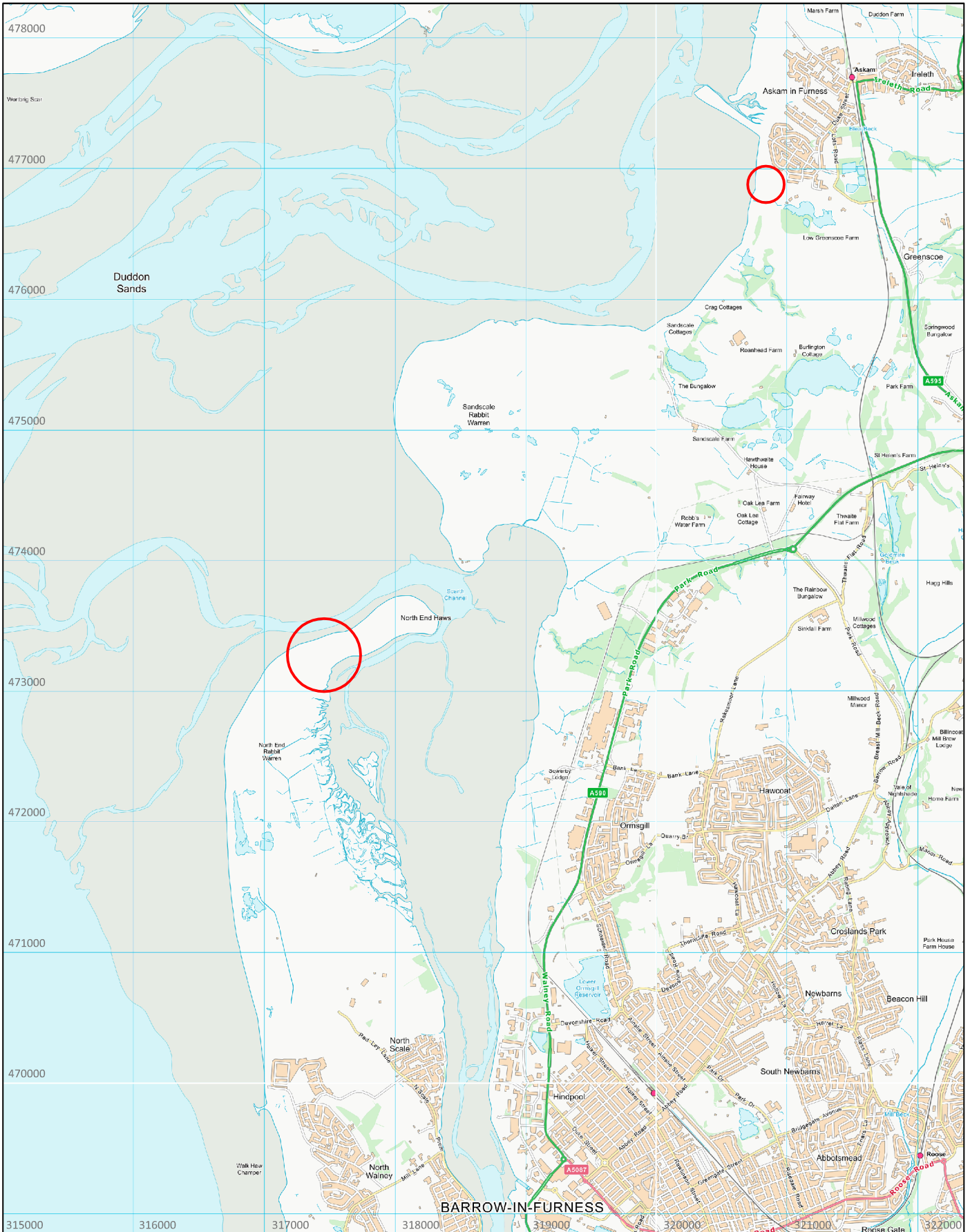
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APPENDIX 1: FIGURES






 <p>Eden Heritage Ltd 2022</p>	PROJECT: Dynamic Dunescapes DunELIFE Project Barrow-in-Furness, Cumbria	KEY:  site locations	 <p>Contains OS data © Crown copyright and database right (2018)</p>
	CLIENT: Natural England		
	REPORT: EH152/01		
	SCALE: 1:40,000 at A4		
	DRAWN BY: MDR		
DATE: January 2022			

Figure 1: Site Locations.







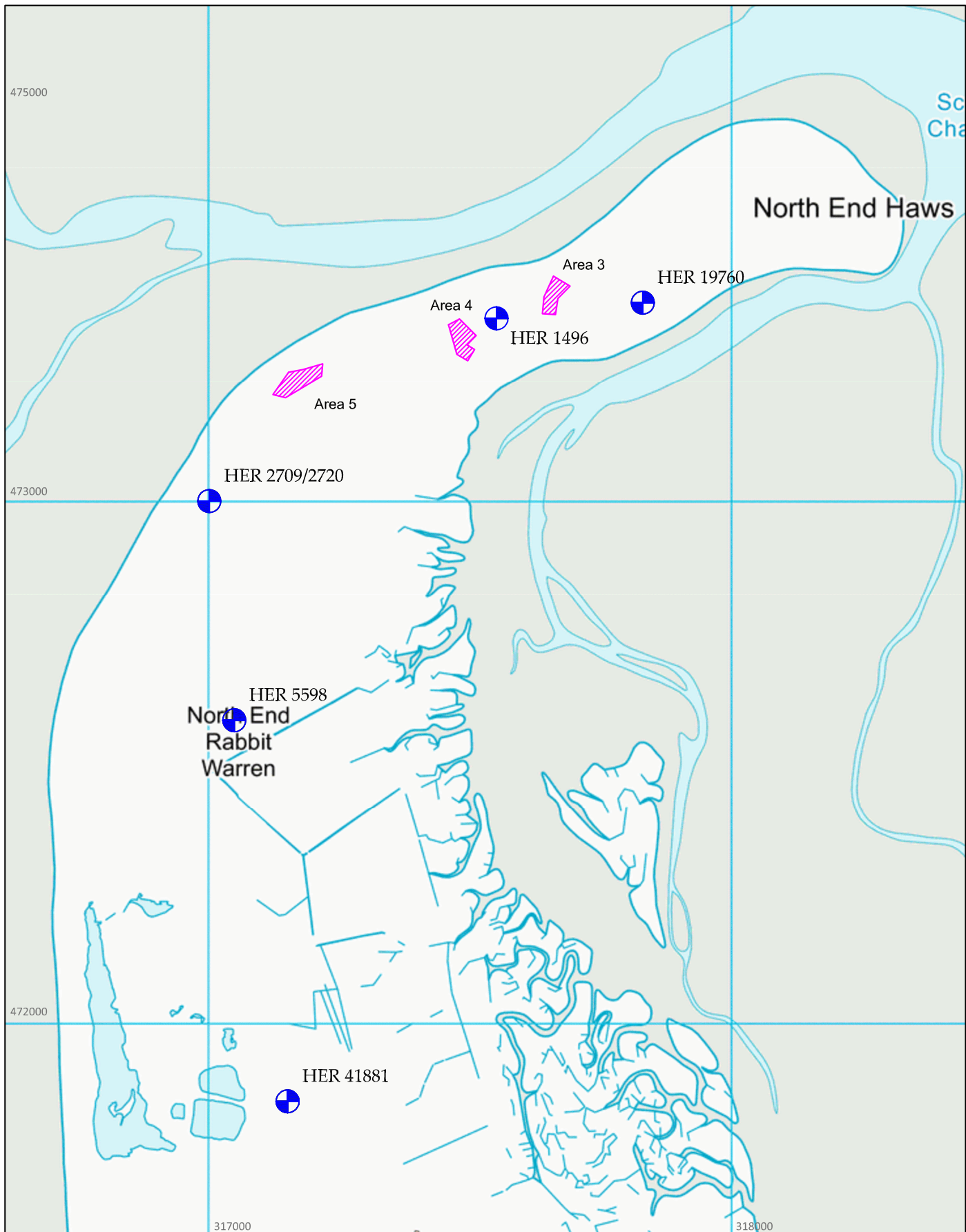
 <p>Eden Heritage Ltd 2022</p>	<p>PROJECT: Dynamic Dunescapes DunelIFE Project Barrow-in-Furness, Cumbria</p> <p>CLIENT: Natural England</p> <p>REPORT: EH152/01</p> <p>SCALE: 1:10,000 at A4</p> <p>DRAWN BY: MDR</p> <p>DATE: January 2022</p>	<p>KEY:</p> <p> watching brief area</p> <p> HER site location</p>	 <p>Contains OS data © Crown copyright and database right (2018)</p>
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Figure 2: Location of Askham-in-Furness project site.



Eden Heritage
Archaeology & Heritage Services

Eden Heritage Ltd 2022

PROJECT: Dynamic Dunescapes DunelIFE Project
Barrow-in-Furness, Cumbria

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SCALE: 1:10,000 at A4


DRAWN BY: MDR

DATE: January 2022

KEY:

 site location

 HER site location



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Figure 3: Location of North Walney project site.

**Heritage Impact Assessment
Archaeological Desk-Based Assessment
Historic Landscape Survey
Written Scheme of Investigation**

**Geophysical Survey
Trial Trench Evaluation
Archaeological Excavation
Archaeological Watching Briefs**

