Agglestone Mire, Knowle Valley
Historic Environment Assessment

Project	Dorset Peatlands Project
Site NGR (centre) between areas	402630, 83100
Site area (combined)	15.31 ha.
Client	The Dorset Peat Partnership
Client contact	Grace Herve, Andrew Norris
Document Author(s)	Matthew Williams MIfA
Document date	November 23

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Introduction

This report has been prepared by Matt Williams of Fearn Heritage and Archaeology. Matt is a Member of the Chartered Institute for Archaeologists (5721); a brief CV is provided in Appendix 1. The report has been produced to support a feasibility study for the restoration of selected peatland sites in Dorset. The project is part of the Nature for Climate Peatland Grant Scheme (NCPGS) which is being delivered by Natural England between 2021 and 2025.

This report focusses on and area of peat knopwn as Agglestone Mire and Knowle Valley (hereafter the 'Site') (Figure 1). It has been identified as potentially appropriate for restoration by the Dorset Peat Partnership (DPP), a sub-group of the Dorset Catchment Partnership. DPP were awarded a Discovery Grant in December 2021 from the NCPGS towards restoration of Dorset Heaths and Mires.

Thanks to Grace Herve of the Dorset Wildlife Trust, Andrew Norris of Forestry England and Gareth Owen of the New Forest National Park.

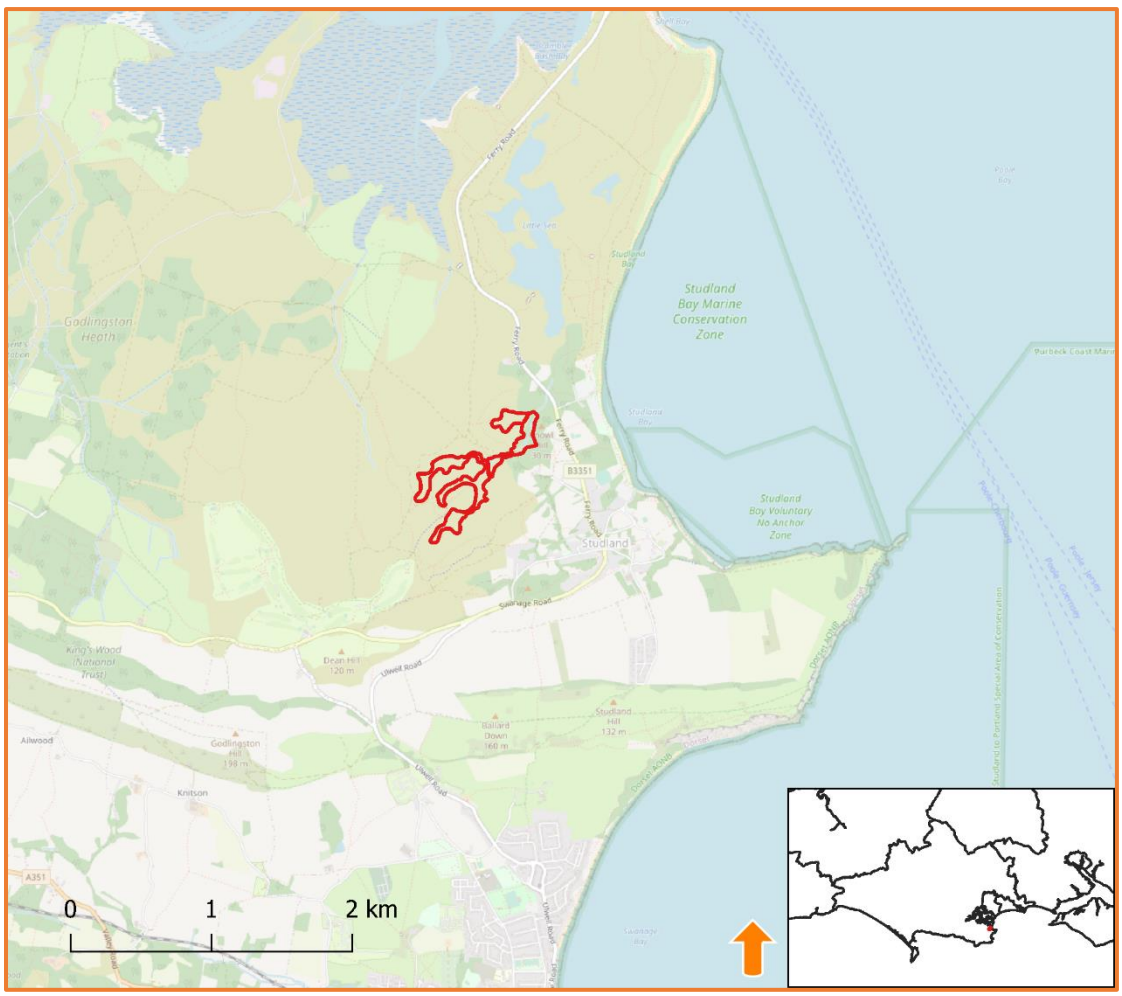

Figure 1 - Site boundary in red. Inset shows Dorset County. Base map data © OpenStreetMap contributors and available from https://www. openstreetmap.org

Aims

The aims of this report are to:

- identify known heritage assets and potentially important historic features within the Site;
- assess the impact of restoration proposals;
- provide advice to avoid or minimise negative impact on heritage features, including methods for archaeological recording where appropriate and
- identify non-carbon benefits to heritage assets

Methodology

Guidance

The format of this assessment follows Annex 5 of the NCPGS: Restoration Grant Guide for Applicants 2023 Draft and the guidance included in the DPP Invitation to Quote.

Assessment methodology

The assessment methodology consisted of the following:

- Identify known historic features and past surveys
- Carry out additional scoping surveys where required
- Assess the importance of the assets and the impact of the proposed changes
- Produce recommendations and advice

Scales for the significance (importance) of a heritage asset, the level of impact and significance of the impact follow those defined in NCPGS Annex 5. In addition, a heritage asset value of 'very low' has been added to describe very common, Post Medieval landscape features such as drains, plantation ridge and furrow, and tracks. These are often recorded in the HER and inform on past use of the peatlands but are not considered important as they are very common feature types which usually date to the 19th or 20th centuries.

Sources consulted

Heritage data sources for known assets were:

- Historic England National Record for the Historic Environment
- DHER monuments (100m Site buffer)
- National Trust HBSMR
- SHINE data

Maps and data sources used to support existing information and identify new heritage features were:

- DHER events
- Environment Agency LiDAR data (2020)
- National Library of Scotland historic maps including 1st ed. 6" Ordnance Survey
- High resolution aerial photographs and Google satellite imagery

Where possible, the above data was collated in GIS using QGIS 3.6.

Potential heritage features from all sources were identified and transcribed into a shapefile layer.

Constraints and limitations

GIS data and rectified maps may not be accurate.

Desk Assessment

Site Description

The Site is managed by the National Trust and is currently under a Higher Tier Countryside Stewardship Agreement (ref 628972). There are no SHINE features within the Site and no heritage management requirements within the Site area. The Site comprises three channels running northeast off Black Down and one running east off Godlingston Heath towards Knowle Hill. The Site is generally open heathland and the channels are wet and tussocky. The lowest area, where the channels flow into the stream, is partially wooded. Between the two southern channels of the site is the 'Agglestone' – a large natural sandstone rock located on a low hill (MDO7956).

The bedrock geology is sand and the superficial geology, which is only present in the channles that form the Site, is alluvium consisting of clay, silt and gravel (BGS 2023). Fifteen cores were taken along the Black Down channels; the thinnest peat was in the far west at 0.80m, the remaining cores all showed peat over 1m thick with some over 3m thick. Three cores taken in the Godlingston Heath channel also showed very thick peat deposits between 1.75m and 3.63m. The thick peat deposits in the channels across the Site suggests that they have remained waterlogged.

Previous Impacts

The channels that comprise Site were not planted and appear to have been natural drainage for the surrounding land. This may have caused erosion of archaeological deposits within and below the peat.

There are no historic landfill areas within the Site. Three Post Medieval extraction or WWII weapons pits are recorded in the DHER in the north of the Site.

Known historic features and pasts surveys

The Site was within the Wild Purbeck project area. This project examined Historic England Archive and University of Cambridge aerial photographs, Environment Agency and Channel Coast Observatory LiDAR, and online imagery such as Google Earth. The data was inputted into the DHER. All the known features within the Sites were recorded during this project.

A scheduled barrow cemetery (NHLE 1013839) is located 350m to the west of the Site on Goldlingston Heath; it is not visible from the Site.

Post Medieval cultivation marks are recorded in the south of the Site (MDO30794). They are visible as faint lines on the multispectral imagery and may relate to attempts at drainage, as they are within the channel and there is no map evidence for plantation in the area. They are considered of very low importance and recorded as (1) in the gazetteer. Three Post Medieval extraction pits or WWII weapons pits are recorded in the north of the Site (MDO3849); they may be associated with WWII use of the Heath and are considered of low importance. They are recorded as (2) in the gazetteer.

In 1918 limpet shells and flakes were found near the Agglestone, and in 1952 several wasters were found (MDO7949); the exact location of both findspots is not accurate but they may relate to a small mound within the channel which is visible on the LiDAR (Figure 6). The finds suggest suggests a flint workshop in the area. The feature is considered of medium significance as it would contribute to our understanding of non-ritual prehistoric activity on heathlands in the region. It is recorded in the gazetteer as (3).

There are no features recorded in the National Trust HBSMR within the Site.

Additional Survey

The following sources were analysed as additional survey:

Source	Site coverage	New feature ref
High-res aerial imagery	100%	None
EA LiDAR 1m res DTM	100%	None
1947 aerial imagery	100%	None
1887 25" Ordnance Survey	100%	4
CASI multispectral imagery	100%	None

Table 1

The high-resolution aerial photography shows a modern track crossing the Site leading to the Agglestone. The water filled ditches are clearly visible running sinuously at the base of the channels except in the wooded area where the channels meet. Here the main ditch can be seen as a curved ridge of vegetation forming the west field boundary. The same field boundary and associated boundaries can be seen as ditches in the LiDAR; the rest of the Site appears relatively featureless.

Historic maps show that the majority of the Site was low lying marshy ground prior to any major drainage in the area. There is no evidence that any part of the Site was plantation. The field boundaries mentioned above are visible on the maps and are part of a complex of enclosures, possibly forming a water management system around a brickworks at the end of a track leading onto the heath. The Dorset Historic Landscape Characterisation records these as Post Medieval squatter enclosures (informal enclosures that encroach on common land). They are evidence for the Post Medieval development of the heath and local economy; they are considered of low importance. They are recorded as (4) in the gazetteer. An historic track crosses the southern channel; it is just visible in the 1947 aerial photograph but not visible in modern images. It is considered of very low significance and is recorded as (5) in the gazetteer.

The 1947 aerial photograph is not very clear and no additional tracks, pits or field boundaries can be seen.

CASI multispectral Imagery is available for these Sites from the DEFRA download website. The data was collected in 2022. The data was manipulated in QGIS and gave varying results - the clearest image is shown in (Figure 9) and is set to Red band: 0-2839, Green band: 0-2881, Blue band: 0-10664. This shows the dry areas as yellow and the wetter, more vegetated areas as blue. The channels, watercourses, ditches and boundaries seen on other sources were visible but no additional features within the Site were identified.

Site visit

A Site visit to the restoration area in the centre of the Site was carried out on 10th February 2023. The weather was clear and bright. The reasons for the visit were to check the restoration area for further finds that may indicate an archaeological site.

The visit confirmed that the Site is very wet and tussocky; access onto the restoration areas was very difficult. The Site conditions did not allow proper examination for finds, although all exposed areas, e.g. eroded edges of ditches, were checked (Figure 4). No finds or archaeological deposits were noted.

Figure 2 - Looking east along (4) restoration area

Figure 3 - Looking south west along (4)

Figure 4 - Exposed deposits along ditch

Consultation

Steve Wallis, Senior Archaeologist at Dorset Council, was consulted on 16th December 2022. He had no further information on the Site. Should mitigation be required, he recommended considering methods used at the Coastal Realignment Project at RSPB Arne; information and links were provided.

The National Trust Archaeologist, Martin Papworth, was on 30th March regarding archaeological potential within the Sites; although there were no specific assets he did draw attention to recent waterlogged finds at Holnicote, Exmoor which demonstrate that significant remains can be preserved below the peat.

Kat Hopwood-Lewis of Natural England provided general advice on Site visits and updated guidance advice throughout the project.

Gazetteer

Table 2 below lists the heritage features that may be affected by the works; they are shown in Figure 10.

No.	Resource(s)	Description
1	DHER	Post Medieval cultivation marks (MDO30794).
2	DHER	Post Medieval extraction pits or WWII weapons pits (MDO3849)
3	DHER	Finds indicating possible prehistoric activity site (MDO7949)
4	OS 25" 1887	Post Medieval squatter enclosure boundaries
5	OS 25" 1887	Historic track

Table 2

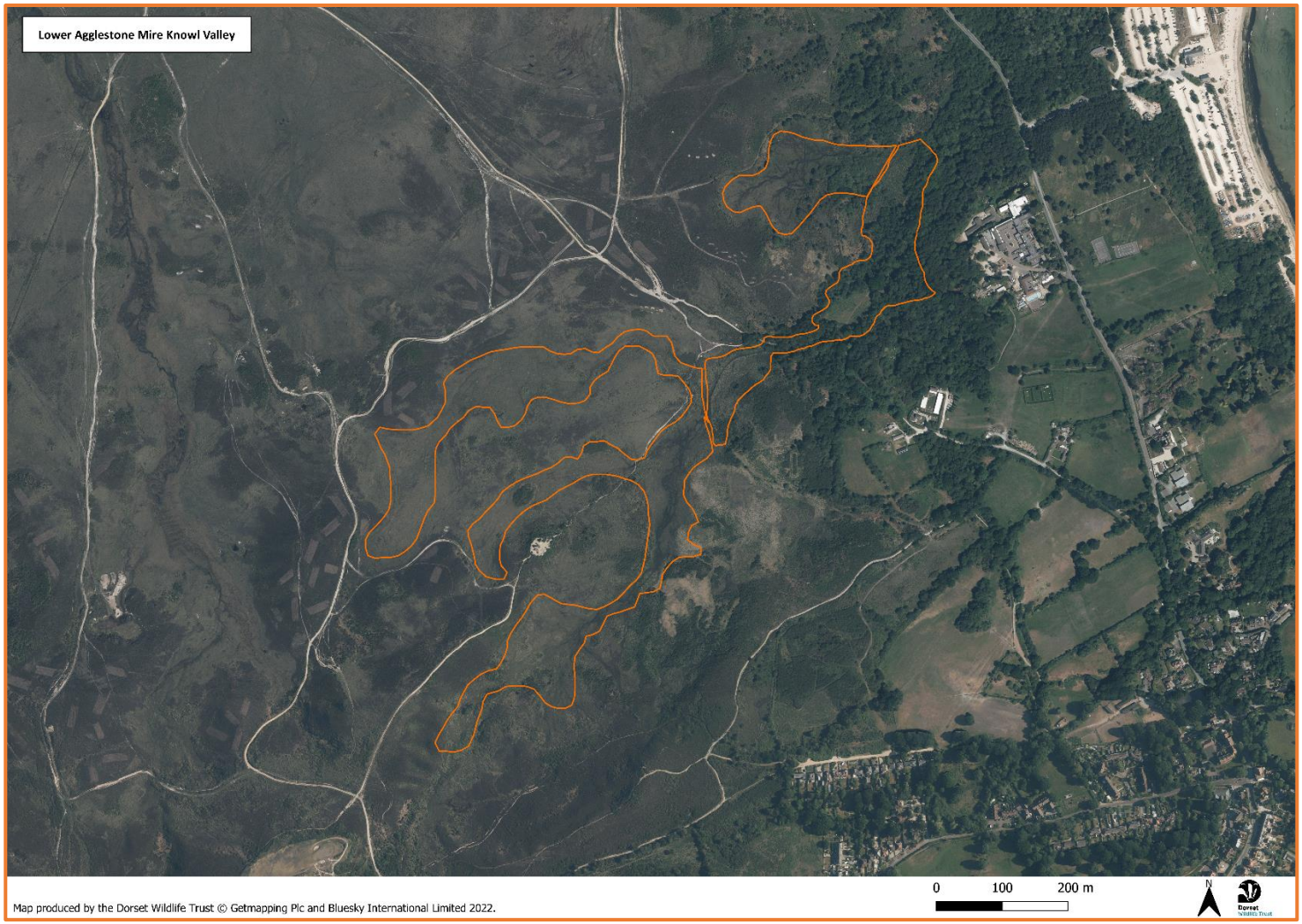

Figure 5 - High resolution AP of the Site. Image produced by the Dorset Wildlife Trust ©Getmapping and Bluesky International Ltd 2022

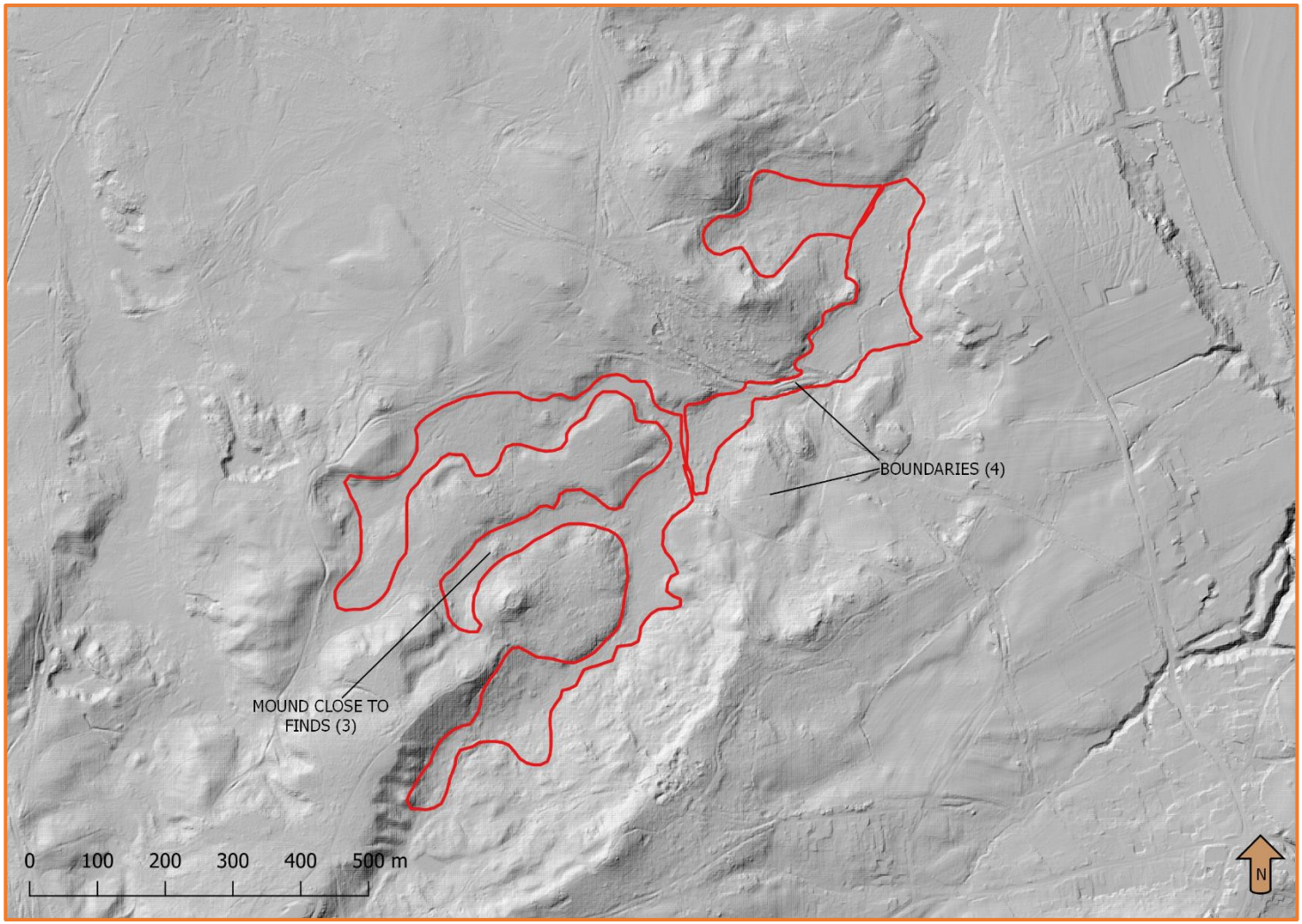

Figure 6 - EA 1m resolution LiDAR. Image from DEFRA used under Open Government License

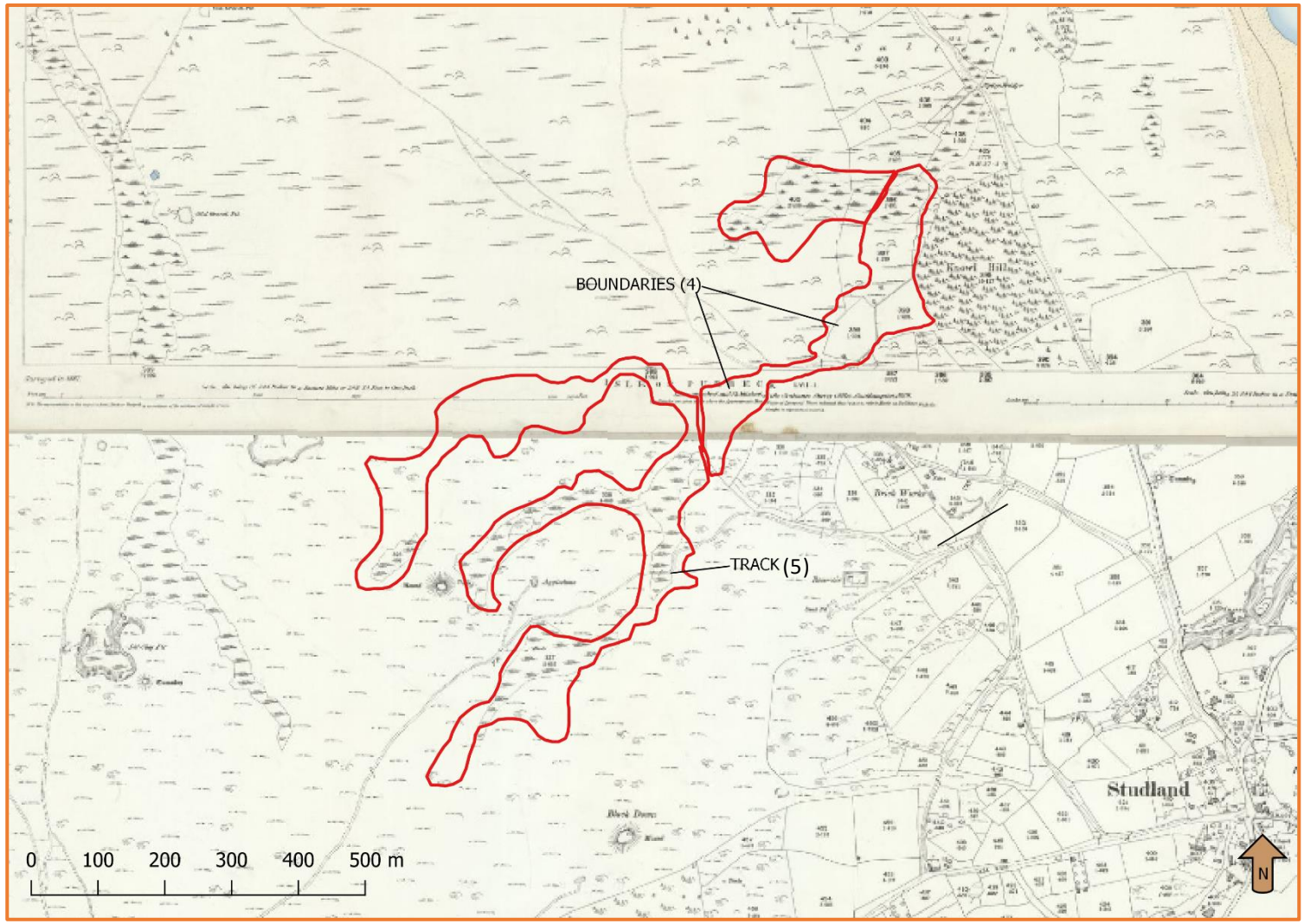

Figure 7 - 1887 1st ed OS 25". Reproduced with the permission of the National Library of Scotland

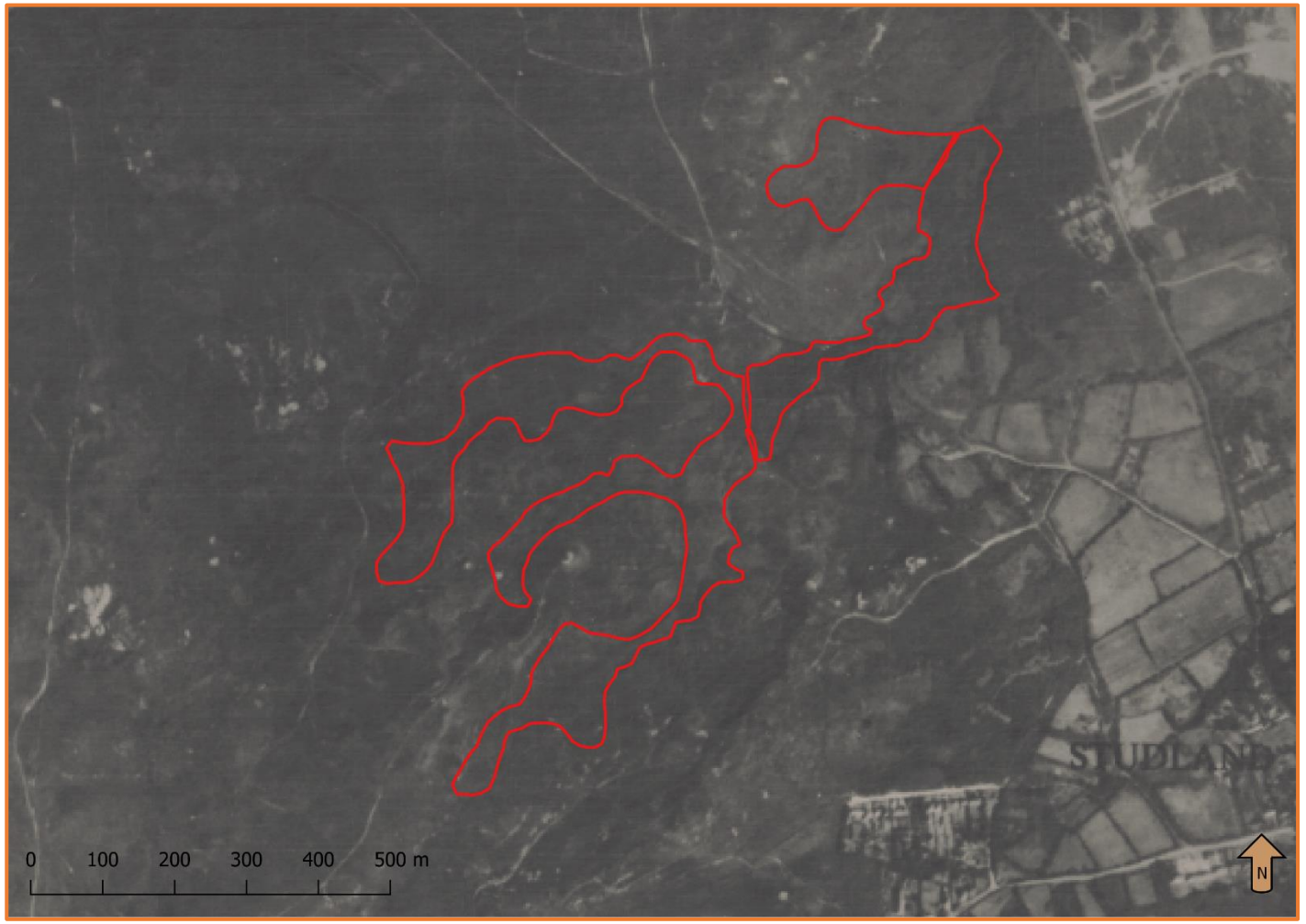

Figure 8 – 1940s aerial image. Reproduced with the permission of the National Library of Scotland

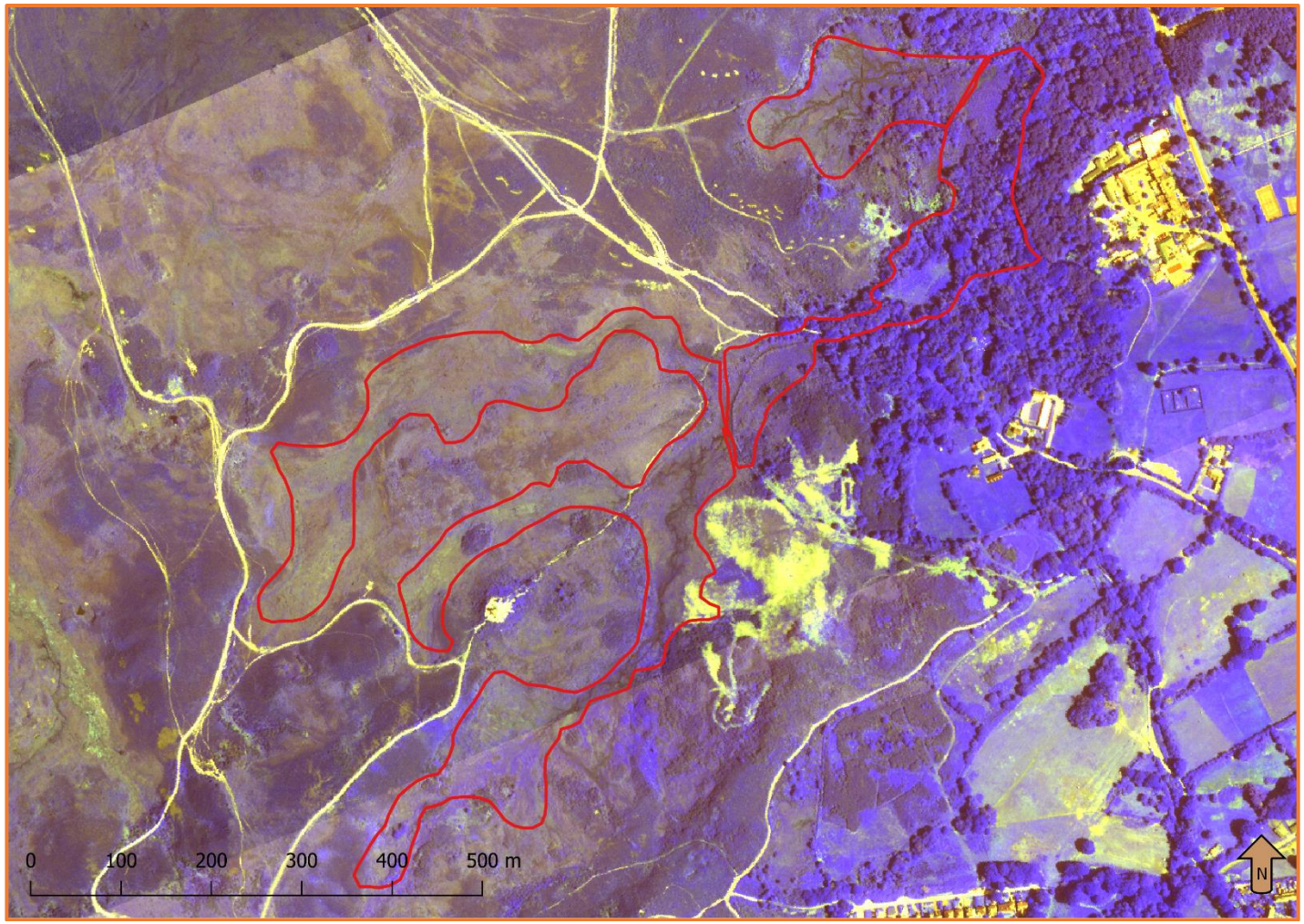

Figure 9 - CASI multispectral image of the Sites. Data from DEFRA used under Open Government License

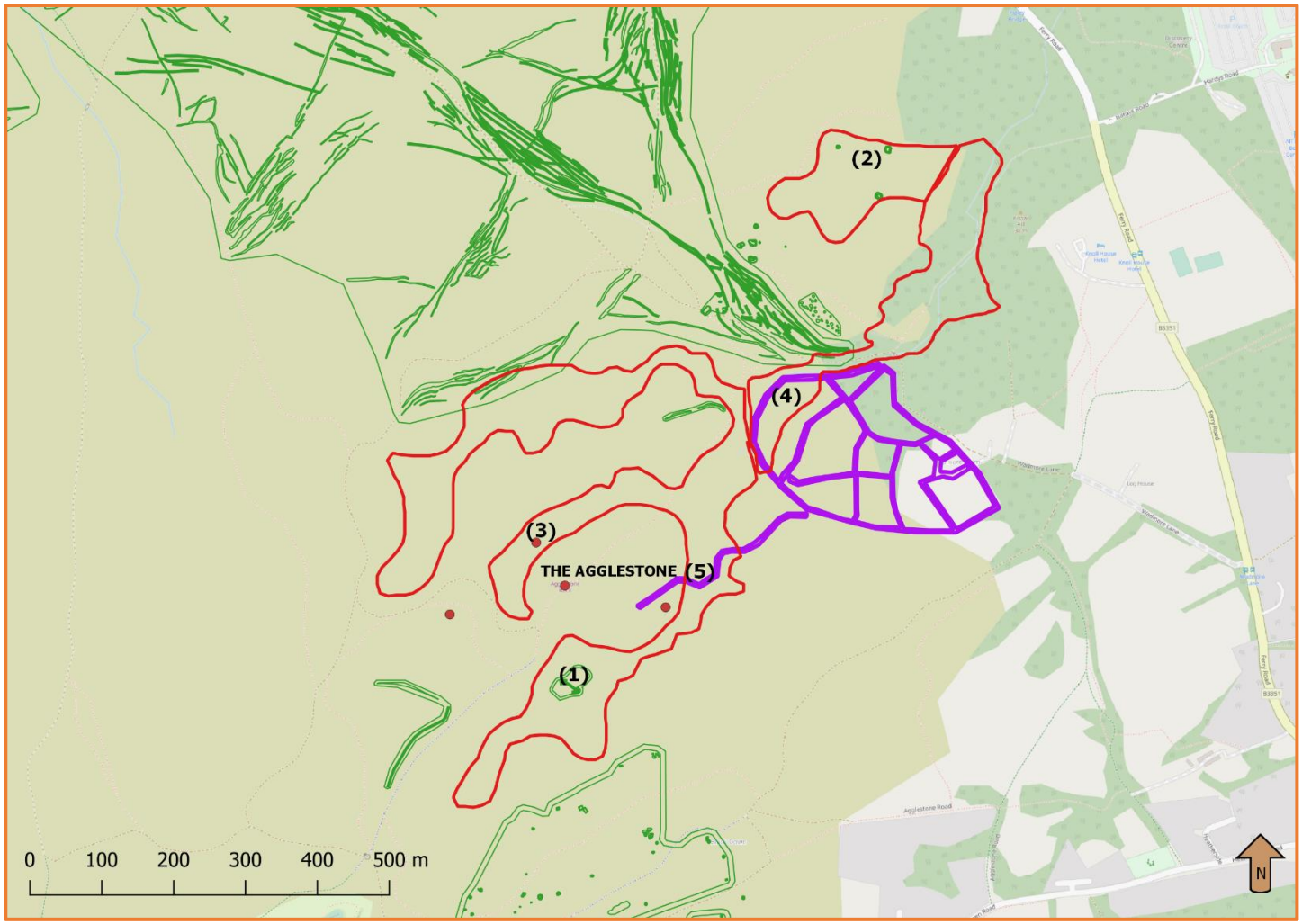

Figure 10 - All heritage features. Base map data © Openstreetmap contributors and available from https://www. openstreetmap.org

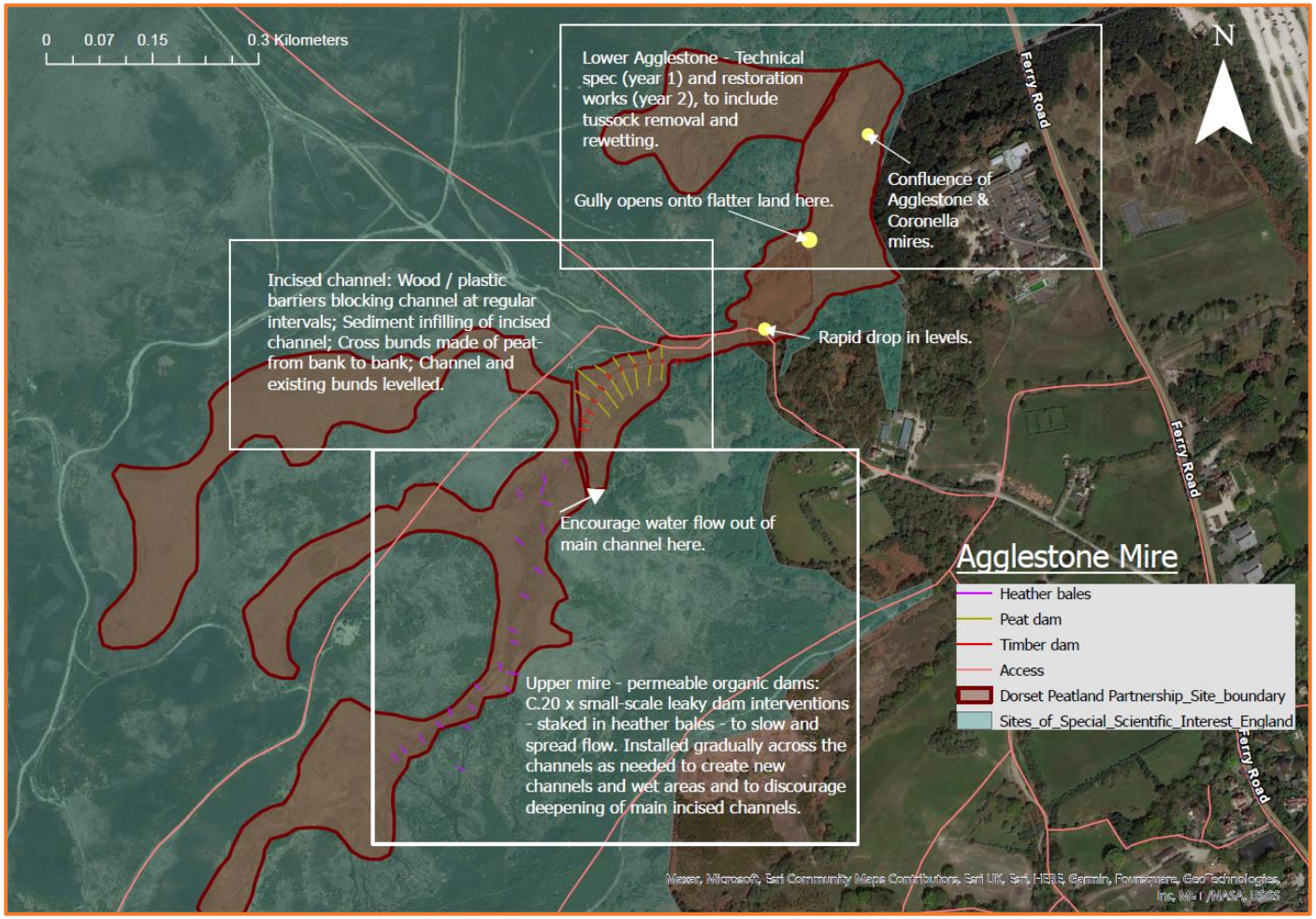

Figure 11 - Restoration proposals

Impact Assessment

Restoration proposals

A plan of the proposals is shown in Figure 11. The restoration proposals involve:

- Inserting wood/plastic barriers
- Creating bank to bank peat bunds
- Levelling existing bunds
- Heather bale channel blocks

Potential impacts

The following will physically impact archaeological features:

- Tracking, turning or driving (especially in wet conditions)
- Excavating for peat bund material

The works will cause temporary noise and visual impact during the operation phase. The restoration will result in very minor changes to the appearance of the landscape, consisting of fewer trees and tussocks, and the creation of standing waters. No permanent visual impact is anticipated.

Potential benefits

Raising the water level may help to preserve unknown waterlogged archaeological deposits within the Heath.

Assessment

The restoration proposals are focussed in the centre and south of the Site. Access is along existing tracks and across some parts of the heath.

The archaeology of the area comprises Bronze Age barrows and numerous widespread features associated with the Post Medieval use of the Heath for mineral extraction, occasional military training and plantation. Evidence for prehistoric activity other than barrows is very rare, although a findspot of flint flakes is recorded near the Agglestone. There is very little evidence for activity on the Heath between the Bronze Age and Post Medieval periods other than the maintenance of the Heath itself.

The barrows on the surrounding heaths are located on high ground, often at the edge of a ridge, and therefore the potential for the discovery of an unknown barrow within the low-lying Sites is negligible. The location of prehistoric settlement or activity sites is less certain and, as with all heathland sites, there is potential for unknown archaeological deposits below the peat especially given the findspot at the Agglestone. During the Iron Age to Medieval periods the heath would have been grazed and it is possible that some of the myriad tracks and old field boundaries originate during these periods, but the potential for unknown features of this date within the Site is very low.

Overall, the potential for unknown features or finds within the Site is low and, given the low impact of the works, no trial trenching or on watching brief is recommended. However, some measures can be taken during the works to avoid damage to potential buried archaeological deposits. Machines should only use the agreed access routes; material for blocks and bunds should be taken from existing banks, if this is not possible the contractor should ensure that borrow pits do not go through the peat. This will avoid damage to mineral layers sealed below the peat layers. Site staff should contact the relevant archaeologist if archaeological remains are discovered.

Regarding the known features on the Site - Features (1), (2) and (5) will not be impacted by restoration or access. Feature (3) is a findspot which may indicate a moderately important archaeological site in the vicinity. The exact location of the finds is not known but they may be focussed on a mound within the channel and machine access runs close by. Straight machine tracking would have a very low impact on potential sites, but turning, stockpiling or other activities may disturb below ground deposits. It is recommended that machines do not turn or use the area around (3) for anything other than direct access. If conditions allow, machines should use the existing track running north from the Aggleston which is further from (3) than the off-track route on the proposals plan. These recommendations are shown as Area 1 in the mitigation plan.

The channel (4) is part of a squatter enclosure boundary and is also one of the ditches to be used in the restoration. It is considered of low importance. The excavation of peat at each side to create the blocks will impact the channel, but most of the feature will not be affected and the overall course will be preserved. The impact is therefore considered very low and no mitigation is recommended. The feature is recorded in existing sources and the GIS data from this report will be sent to the DHER.

Construction of the blocks will involve relatively extensive excavation. There may be archaeological remains below the peat and contractors should not disturb the mineral layers below the peat unless necessary.

Mitigation

A recommendation area has been identified within the Site to protect archaeological features during the work (Figure 12)

Area	Recommendations	Heritage assets
1	**Findspots indicating possible prehistoric site**. If machines need to cross the area for access they should track directly across avoid turning (or any movements) that may disturb the ground. Machines should use the existing track to the east if possible.	3
All	Machines and vehicles should stick to established routes Care should be taken not to disturb layers below peat unless it is a necessary part of the works. Contractors should be aware of potential artefacts within the peat.	

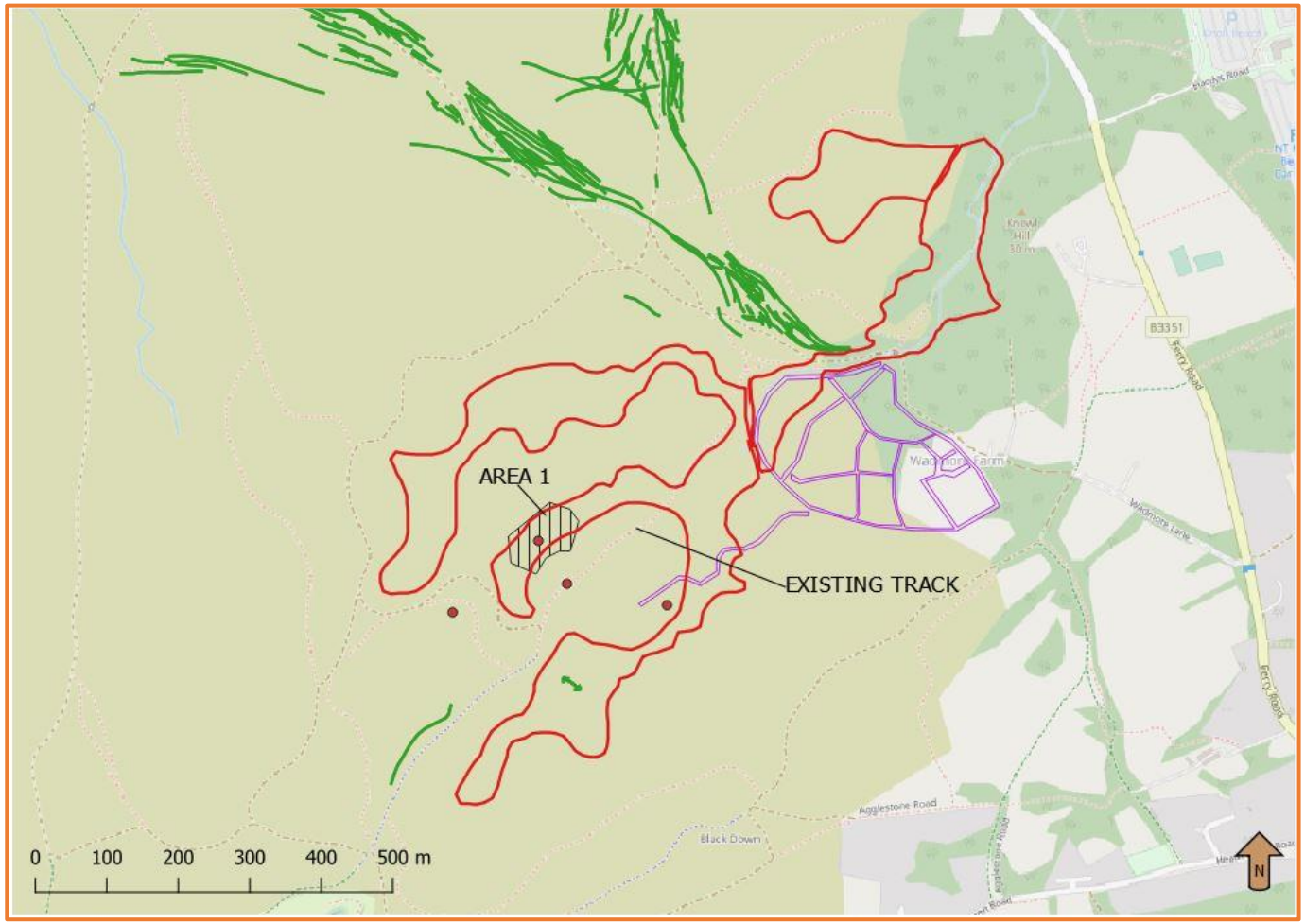

Figure 12 - Mitigation proposals

Site work plan

1. Site contractors should be made aware of heritage constraints prior to commencing on site preferably in a toolbox talk.
2. A copy of the map showing Area 1 and mitigation table should be available to the Site workers in the cabin.
3. Before and after pictures should be taken by the contractors and sent to DPP.

Contingencies

Should unexpected archaeological remains be encountered during the works, work in the affected area should stop and the National Trust Archaeologist should be contacted immediately so that mitigation plans can be agreed. Contact details are:

Dr Martin Papworth

National Trust Archaeologist

Direct Line: 01747 873277

Mobile: 07771 974394

Email: martin.papworth@nationaltrust.org.uk

Archiving and data dissemination

New archaeological asset shapefiles will be sent to DHER

References

British Geological Survey (BGS) https://mapapps2.bgs.ac.uk/geoindex accessed 01/03/2023

DEFRA Historic landfill sites https://www.data.gov.uk/dataset/17edf94f-6de3-4034-b66b-004ebd0dd010/historic-landfill-sites accessed 6/11/22

DEFRA SHINE data https://www.myshinedata.org.uk/look-up-a-record accessed 9/12/22

Environment Agency LiDAR data (2020) *LIDAR Composite DTM 2020 - 1m - data.gov.uk* accessed 14/11/22

Google Satellite *http://www.google.cn/maps/vt?lyrs=s@189&gl=cn&x={x}&y={y}&z={z}* accessed 14/11/22

Historic England (2021) *Peatland Restoration and the Historic Environment: An Introduction to the Cultural Heritage of Peatlands Historic England* https://historicengland.org.uk/images-books/publications/peatland-restoration-historic-environment/standards-environmentally-sustainable-peatland-restoration-projects/

Historic England (2021) *Peatlands and the Historic Environment* https://historicengland.org.uk/images-books/publications/peatlands-and-historic-environment/heag300a-v1-1-peatlands/

Historic England (2022) National Record for the Historic Environment data *https://historicengland.org.uk/listing /the-list/open-data-hub/* accessed 18/11/22

National Library of Scotland historic mapping *https://geo.nls.uk/maps/* 14/11/22

Natural England data Countryside Stewardship data https://magic.defra.gov.uk/*MagicMap.aspx* accessed 21/11/22

Open StreetMap *https://tile.openstreetmap.org/{z}/{x}/{y}.png* accessed 14/11/22

Appendix 1

MATT WILLIAMS MCIFA

Matt will be the project lead. He has worked in professional archaeology and heritage management for over 20 years, starting as an excavator and moving on to heritage planning consultancy, project management and heritage resource management. His CV is attached.

Matt currently works part time for the RSPB as the Reserves Archaeologist for England and Wales. One of his key roles is providing heritage management advice to RSPB Managers and Wardens. This includes advice on:

- peatland and heathland restoration;
- heritage risk of potential land acquisitions;
- potential physical impact of removing plantation, tree planting and excavating lagoons;
- impact of changing water levels when re-creating coastal wetlands;
- vegetation control on earthworks and historic buildings and
- planning advice

Matt is used to making swift assessments of the significance of heritage features and identifying the attributes that make them important. This is often done without a site visit, using HER data and images such as RSPB aerial photographs and online data (e.g. NLS online historic mapping).

Over the last two years Matt has been involved in RSPB projects to restore peatland and heathland. He has visited the peat restoration areas at Lake Vrynwy, where he gave an on-site presentation to RSPB ecologists and reserve staff on peat restoration techniques and the heritage resource. This covered how the heritage resource should be assessed and how to mitigate the potential impact of restoration techniques including blocking grips and re-profiling. The presentation used several on site examples. The resources for the presentation were:

- IUCN Peatland Restoration Techniques. An Introduction (2015)
- NCPGS Guide for Applicants (Jan 2022 draft)
- Peatlands and the Historic Environment (Historic England 2021)
- Cadw Peatland Restoration and the Historic Environment – Guidance Note (2021 draft provided by Cadw)
- The Past and the Peat. Archaeology and peatland restoration on Exmoor (Bray 2015)

Matt is competent in GIS applications including ArcPro and QGIS, and is used to producing concise and focussed reports to strict deadlines.